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JUL/AUG 1999 VOL.2 NO. 4

HANDHELD PC MAGAZINE

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50 Great CE Tips!

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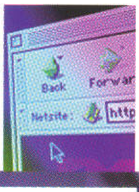

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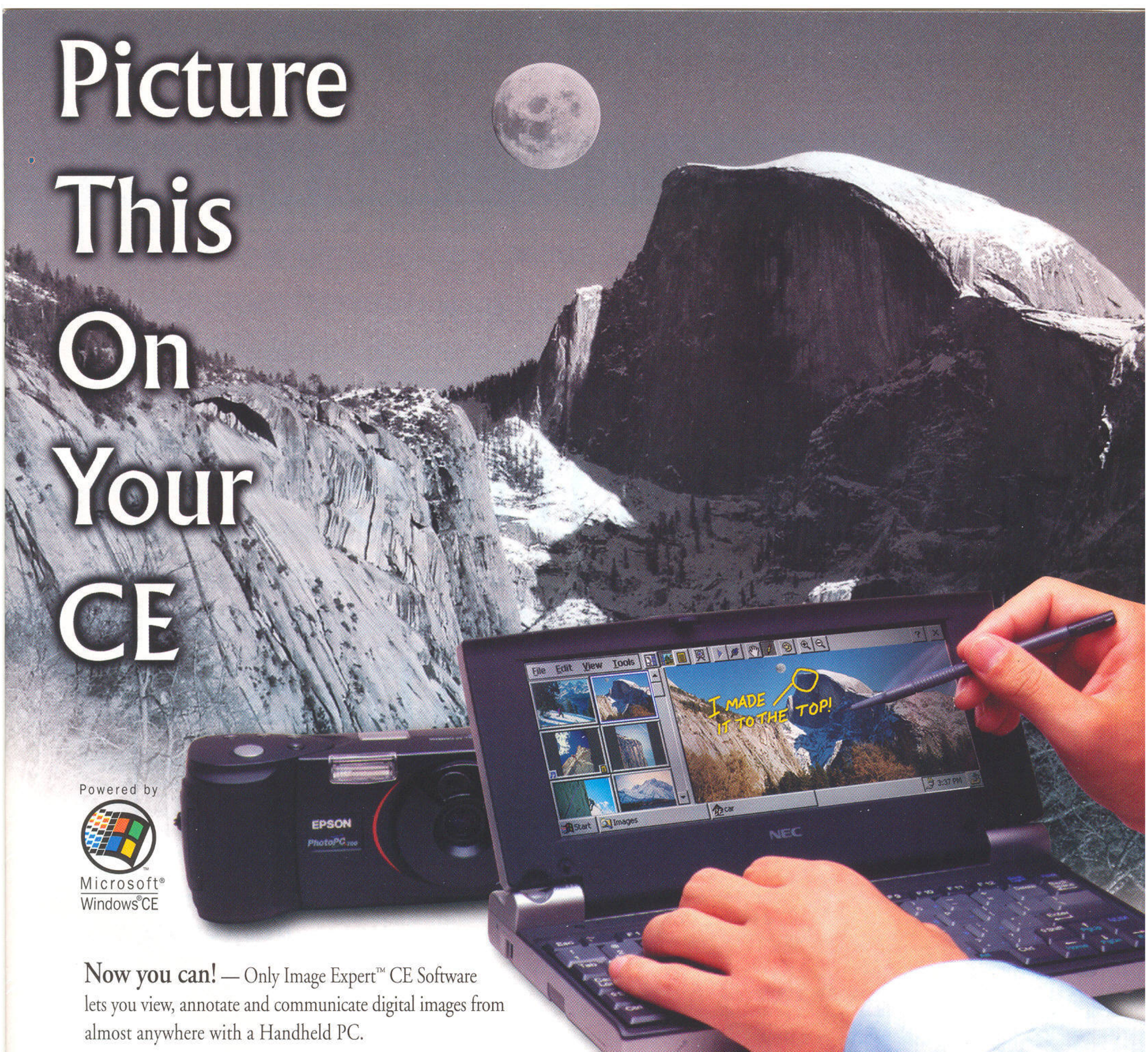
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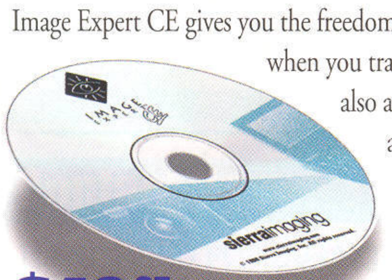
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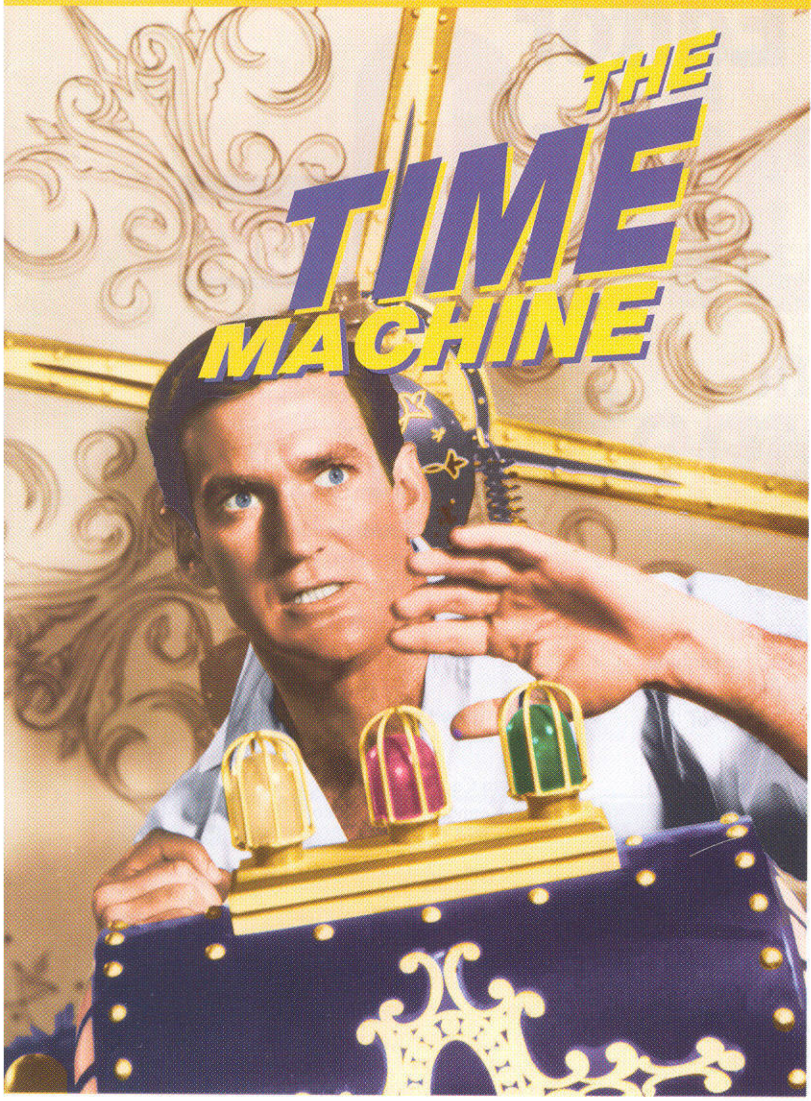
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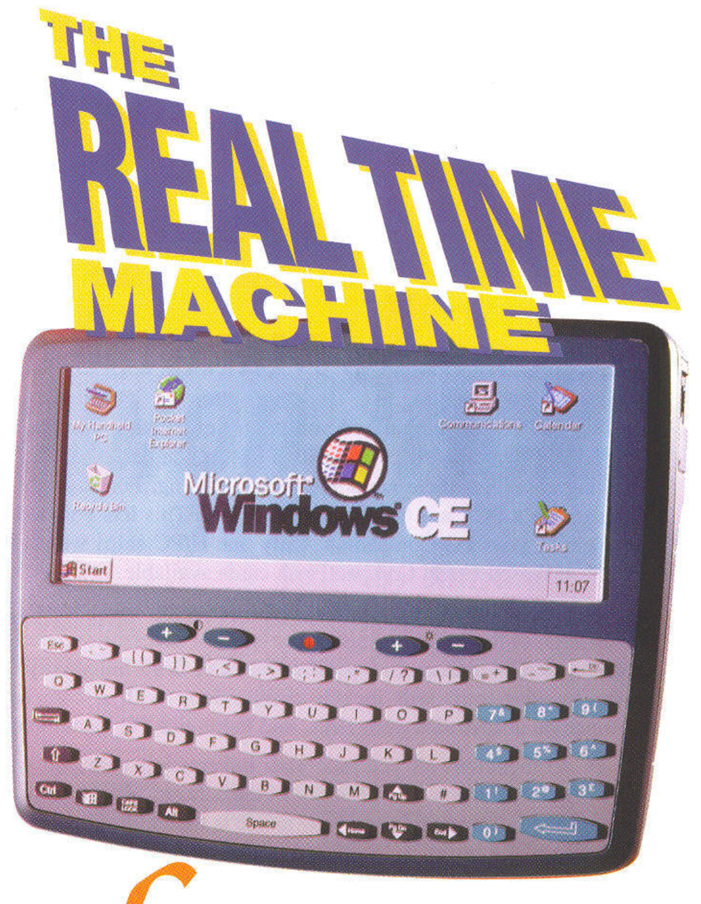
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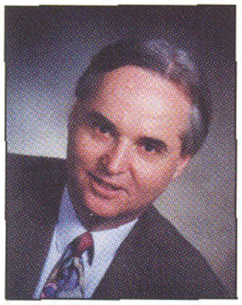

From The Editor

Rich Hall

The cover page of this issue of *Handheld PC Magazine* proclaims "The Best Little Handheld on the Planet!" Ed Zabrek, the author of the review, and quite a few others I've talked to are in love with Hewlett-Packard's new Jornada 680 Handheld PC Professional Edition computer. In fact, I'm carrying one in my pocket right now.

When the H/PC Pros started coming out late last year, we kept seeing devices the size of a small notebook computer. Most of them had 640x480-or-better color screens, and most of them had keyboards over 90% the size of a standard keyboard. Many in the computer press were speculating that we had seen the end of the small, pocketable Handheld PC. After all, who could use that tiny keyboard anyhow?

Those of us who have been writing about mobile computing for more than a couple of years suspected that we had not seen the last of the smaller handhelds. There is an honorable tradition of devices like the Poquet, the Psion and the HP 200LX Palmtop PCs. More importantly, there are millions of users who like this type of device (it has a small keyboard, comes with the necessary software built in, and it slips in your pocket). And yes, you can use the keyboard. You develop shortcuts, sometimes you type with three or four fingers on each hand, but you adapt very quickly. Take a look at the review of the Jornada 680 for more on this innovative device. Ed Zabrek also reviews Compaq's entry into the Palm-size PC arena, their new color-screen Aero 2100. This Palm-size PC has one of the most readable screens I've seen. This is especially true out of doors, in bright sunlight.

Much of the rest of the issue is devoted to "on-the-road" issues. I take a look at four ultra-portable printers for mobile professionals who must take a printer with them. I also give some tips that can help you avoid the hassle. Contributing Editor Chris De Herrera gives us his top five tips for staying connected on the road. Regular contributor Jason Perlow takes a look at wireless communications solutions that help you stay in touch on the road. I also take a look a bSQUARE's bREADY Reader, software that lets you read a good book on your PC Companion.

I'd like to thank John Phillips for writing about how his company used H/PCs to organize and simplify their merchandising effort. Thanks also to Andy Seybold for his article on information appliances. Finally, a big thanks to Contributing Editor Jim Christian. A recent e-mail survey indicated that our readers wanted more how-to articles and tips. Jim obliged by deluging me with over 100 tips and tricks. We only had room for the first 50 in this issue. They're short and sweet, and cover a variety of topics. Let me know if we're on the right track.

Rich Hall

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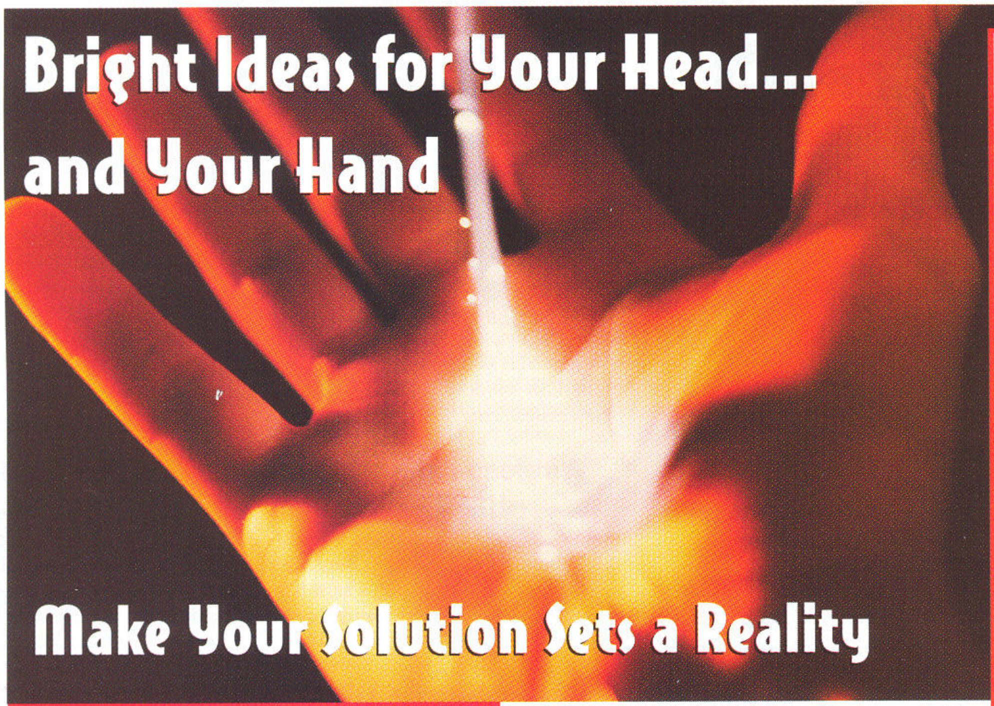

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newsBYTES

Microsoft invests $5 Billion in AT&T

Microsoft's large investment in the communications giant will have a large impact on Windows CE acceptance, especially in the expanding area of cable services. As a part of this deal, AT&T will use Windows CE as the operating system for some of its digital set-top boxes, which manage cable links to customers. AT&T's previous commitment to Windows CE increased dramatically with this deal. AT&T will also use Microsoft software to deliver e-mail and interactive services over cable television.

New versions of Windows CE

Microsoft is hard at work on upgraded versions of the Windows CE operating system and the applications bundled with it. "Rapier" is rumored to add pocket versions of Microsoft's desktop applications to the Palm-size PC platform. Presumably, these would include versions of Excel, Word and even a Pocket version of Microsoft Money. The subsequent versions, code-named "Cedar," would add support for smart phones and similar devices. One Microsoft goal, attributed to Microsoft's Phil Holden, is to give Windows CE a more Web-like look and feel. Speculation is that Microsoft will replace cascading menus icons, and that this will require more powerful CPUs. Word is that Microsoft is also working on an update of Windows CE Services, to resolve driver and I/O port conflicts.

Windows CE in China

Microsoft's plans for the country with the largest population on Earth include a project code named "Venus," based on a Chinese version of the Windows CE operating system. The Venus project will allow Chinese developers to create new hardware platforms for educational applications, the Internet, e-mail, games, T.V., video and more. Acer, ESS Technology, Philips Consumer Electronics, and other manufacturers will support the effort with products. In a related announcement, ESS Technology signed an agreement with Xiamen Xiaxin Electronics Company of China to develop Windows CE-based Video Internet Computer systems aimed at computer, consumer, and communications markets in China. Xiaxin will use CPU, modem SVCD and DVD chips from ESS to develop the systems. For more information, contact ESS, www.esstech.com.

Wireless links added to Microsoft Network

Microsoft will add a service called MSN Mobile to MSN, that will deliver Web content to a variety of wireless devices, including cell phones, pagers, and PC Companions. The project is a part of Wirelessknowledge, its joint venture with Qualcomm. Microsoft is also developing a small browser, based on the Windows CE operating system, for the Wirelessknowledge service. The code for this "micro browser" will be available in Q3 or 4, 1999.

Uniden releases CDPD modem for Handheld PCs

Uniden Multimedia Corp. is shipping its Uniden Data 2000, a Type II PC Card CDPD modem. The card utilizes Cellular Digital Packet Data technology and will work with Windows CE 2.0 and above Handheld PCs with a PC Card slot. The Data 2000 is self-powered by a pair of AAA batteries, and comes with an AC power adapter. For more information, contact Uniden; phone: 888-6-UNIDEN; Web: www.uniden.com.

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What happens to Windows CE if Microsoft loses the suit?

The legal action against Microsoft is not yet over, but media speculation abounds about the fate of the company's operating system. If they win, state attorneys general may ask Microsoft to give up control of the Windows operating system (NT, 95, 98, 2000), either by selling it off or making it available to third-party developers as on open-source operating system. Of special interest to readers of this magazine, Windows CE has not been mentioned, presumable because Microsoft does not have a near monopoly in the PDA operating system market. And 3COM, who manufacturers and markets the Palm computers, is working very hard to make sure that doesn't happen. Windows CE will most likely stay with Microsoft and they will continue to improve it. We've read speculation that if NT/95/98/2000 are sold, Microsoft would put even more attention on CE.

Novatel CDPD modem for Palm-size PC

Novatel Wireless will work with Casio Inc., to create a Cellular Digital Packet Data modem cradle for Casio's Cassiopeia E-10 and E-11 Palm-size PCs. No word on whether or not a modem cradle is in the works for the new Casio E-100. For more information, contact Novatel Wireless, Web: www.novatelwireless.com; or Casio, Web: www.casio.com.

New Web browser for Windows CE

STNC Ltd has announced a Windows CE version of its HitchHiker smartphone Web browser. HitchHiker for CE is a HTML 3.2 browser that will allow mobile users access to a range of Web-based information services. HitchHiker for CE includes T9 text input from Tegic Communications, allowing rapid text entry from a mobile phone's numeric keypad. HitchHiker for CE is not an end-user product, but designed to be included by manufacturers of Windows CE-based mobile phones. For more information, contact STNC, Web: www.stnc.com.

Microsoft encourages Sybase in Windows CE Web application development

Microsoft will pay Spyglass $20 million to design Windows CE applications for Internet devices. Spyglass will create consumer-based Web applications for the Windows CE operating system. Spyglass previously developed the Mosaic Web browser. For more information, contact Spyglass Inc., Web: www.spyglass.com.

H/PC Pro upgrade chips for HP 620/660LX users

Hewlett-Packard Company has announced the availability of user-installable upgraded chips for its HP 620LX and 660LX Palmtop PCs. The chip includes the Windows CE 2.11 operating system, the H/PC Pro class of Pocket applications and utilities, and new productivity applications from HP. The HP applications are described in detail in the review of the HP Jornada 680, page 8 this issue. The upgrade will increase the built-in RAM of the HP 620 from 16 to 32 MB. The upgrade will have an estimated U.S. street price of $179 and can be ordered online at the HP Shopping Village, www.shopping.hp.com.

bSQUARE's Industrial Automation solutions

bSquare Corporation has announced that it will offer Industrial Automation solutions to manufacturers of specialized Windows CE devices. For more information, contact bSquare, www.bsquare.com.

Microsoft challenges MP3

Microsoft has released its updated version of Windows Media Technologies U). The software lets users download and play music files from the Internet. crosoft is touting its Windows Media Rights Manager (part of the package) as a way to guard against piracy. Windows Media Technologies is a desktop application, and there was no word about Windows CE in the announcement. But we'd be very surprised if a Pocket version of this wasn't in the works for PC Companions. ■

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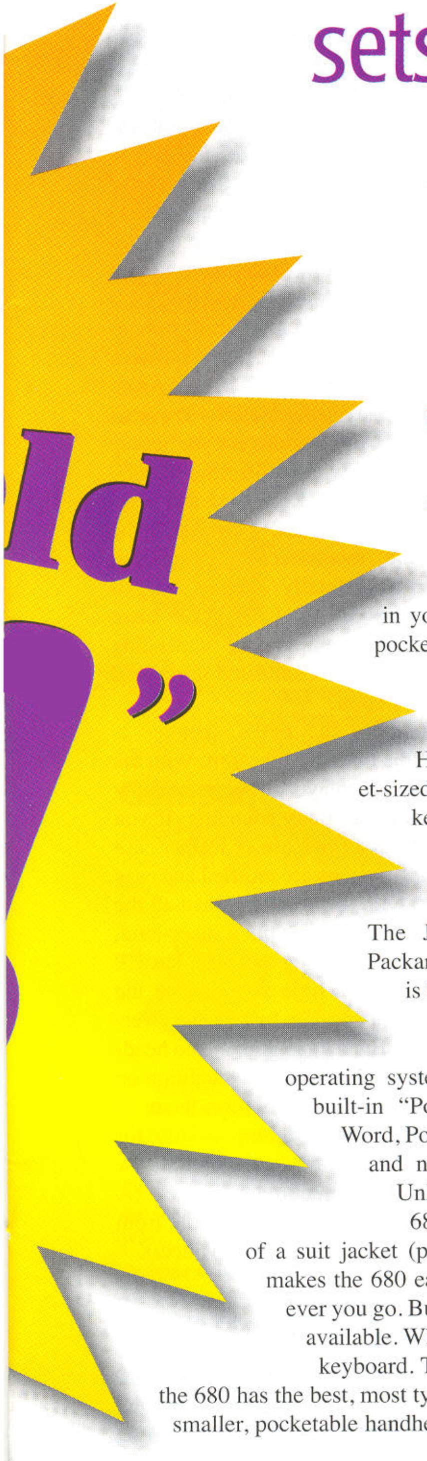
Hewlett-Packard's new Jornada 680 sets the keyboard standard for pocket-sized Handheld PCs



BY ED ZABREK, M.D.

Have you ever dreamed of a Handheld PC with a more natural feeling keyboard? I'm not talking about one of the big "mini-notebook" Handheld PCs, but a real handheld; one you can easily hold in your hand and actually slip into your pocket. Well dream no more! The engineers at the Hewlett-Packard Company (www.hp.com/jornada) have given us the HP Jornada 680 Handheld PC, a pocket-sized powerhouse with a 76% full-size keyboard that you can actually use! I'm writing this review using my 680 and I may never pull out my laptop again.

The Jornada 680 is one of Hewlett-Packard's two new Handheld PC Pros, and is the latest Handheld PC in the 600LX series. The H/PC Pros use the latest version of the Windows CE operating system (2.11) and the latest set of the built-in "Pocket" applications (Pocket Excel, Word, PowerPoint, Internet Explorer, Outlook and now Pocket Access and InkWriter). Unlike the larger HP Jornada 820, the 680 slips easily into the breast pocket of a suit jacket (purse, briefcase, lab coat, etc.). This makes the 680 easy to take and keep with you wherever you go. But there are other small Handheld PCs available. What sets the 680 apart from them is its keyboard. There is no question in my mind that the 680 has the best, most typeable keyboard found on any of the smaller, pocketable handheld devices.

Deep purple case packed with features

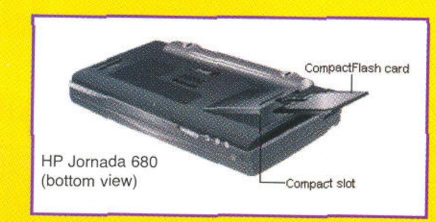
The Jornada 680 has a traditional clamshell case, deep purple (almost black) in color with silver accents. The 680's spring-loaded case hinges keep the clamshell from flopping open accidentally without needing the usual latch to keep it closed. Controls for the 680's voice memo recorder are found on the left front edge of the case, and now include an "Audio Lock" to prevent accidental recordings. The pop-out stylus is stored in a slot on the right front edge of the 680. The PC Card slot is on the left side of the case and the phone plug and power input on the right. The serial port and a security cable slot are found on the back.

The Jornada 680 sports a speedy 133 MHz, 32-bit Hitachi SH3 processor. The 680 comes with 16 MB of SDRAM (upgradeable by the user to 32 MB) and 16MB of ROM (also user upgradeable). The 680 has a 6.5" diagonal ½ VGA (640x240), 256 color touchscreen. The screen is large enough to view Pocket Excel spreadsheets, type business reports, term papers, and this review. It's even pretty good for viewing Web pages. You can use the 680's built-in 56k, v.90 modem to connect to your Internet Service Provider, download your E-Mail (including attachments!) and browse the Web using Microsoft's Pocket Internet Explorer 2.0, also built into the ROM of this Jornada.

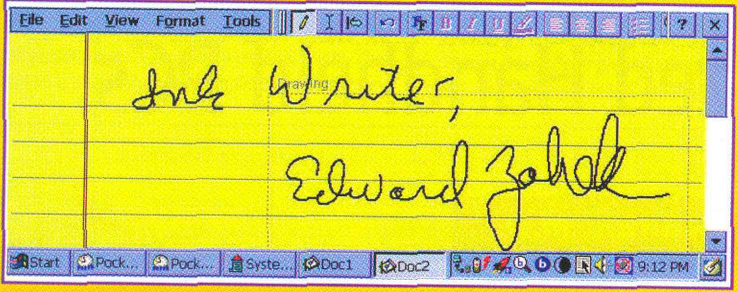
The 680 is slimmer and lighter than its predecessors (the HP 620 and 660LX). It measures 7.4 x 3.7 x 1.3 in, and weighs in at a mere 1.1 pounds. 11 shortcut keys are found on the top row of the keyboard. These launch the major software programs found on the Jornada. These are actual keys, not the membrane hotkeys found on the older 600s. The right margin of the screen has four "soft" keys (HP calls them "hard icons") that let you quickly access the 680's HP settings application, page up and down, and switch between tasks. To make room for more important keys, HP made the shortcut keys 1/2 normal size. Note also that the keys on the number row, immediately below the quick launch keys, are just little narrower than the letter keys. On a standard keyboard, the zero is above and to the left of the P key. On the 680, the zero is above and to the left of the O key. A few other compromises were made in key placement to keep the most important keys as large as possible. A touch typist will need to adapt to these changes.

You can use the HP Hot Keys utility, accessed from the Control Panel, to re-program the shortcut keys or the hard icons to launch the application of your choice. For example, I have reprogrammed the 3rd hotkey (microphone/memo-record) to activate Pocket On-Schedule (www.odysseyinc.com), a third-party contact manager I personally cannot function without.

[EDITOR'S NOTE: Odyssey Computing is just completing a major revision of Pocket On-Schedule. An upcoming issue of Handheld PC Magazine *will be reporting on the next version of this exciting program.]*



Screen 1: The Jornada 680's unique Compact slot is accessed from the bottom of the case. The Compact slot flips up and the CompactFlash card slips in, as shown here.


File Edit View Format Tools
Start Pock... Pock... Syste... Doc1 Doc2 9:12 PM

Ink Writer,
Edward

Screen 2: InkWriter, built into all H/PC Pros, lets you make and store handwritten notes and simple sketches.

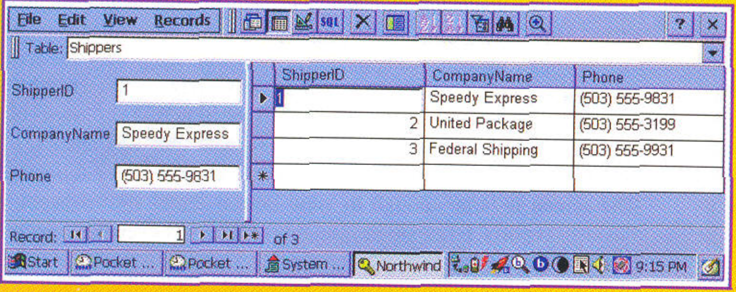


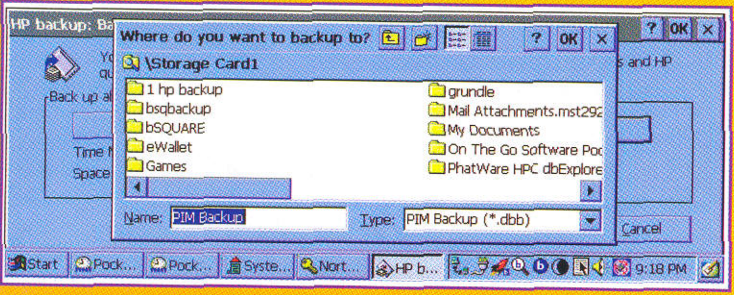
Table: Shippers

ShipperID: 1
CompanyName: Speedy Express
Phone: (503) 555-9831

ShipperID	CompanyName	Phone
1	Speedy Express	(503) 555-9831
2	United Package	(503) 555-3199
3	Federal Shipping	(503) 555-9931

Record: 1 of 3

Screen 3: Pocket Access lets H/PC Pro users create databases on their H/PC and keep them synchronized with desktop PC versions of Access.



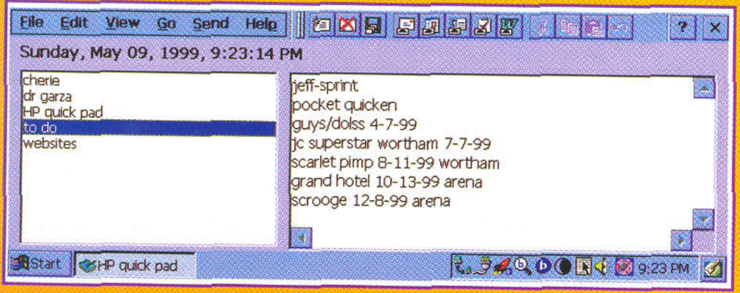
Where do you want to backup to?

\Storage Card1

1 hp backup
bsqbackup
bSQUARE
eWallet
Games
grundle
Mail Attachments.mst292
My Documents
On The Go Software Poc
PhatWare HPC dbExplore

Name: PIM Backup
Type: PIM Backup (*.dbb)

Screen 4: HP Backup lets you backup and restore your entire 680, or just the Pocket Outlook information. As shown here, you can use HP Backup to save data to a PC or CompactFlash storage card.



Sunday, May 09, 1999, 9:23:14 PM

cherie
dr garza
HP quick pad
to do
websites

jeff-sprint
pocket quicken
guys/dolss 4-7-99
jc superstar wortham 7-7-99
scarlet pimp 8-11-99 wortham
grand hotel 10-13-99 arena
scrooge 12-8-99 arena

Screen 5: The HP Quick Pad lets you take quick notes and save random information. You can later forward your quick notes to Calendar, Contacts, Tasks, Pocket Word, or InBox.

Handy and safe Voice Recorder controls

Voice Recorder is the feature that lets you record short voice memos and play them back at a later time (like a tape recorder). So if you're running to a meeting and someone shouts, "Don't forget to call me!" you can pull out the 680, hold down the record button and say "Call Janice ASAP." This feature is built into most Windows CE devices, but HP improved the positioning of the Voice Recorder controls by placing them on the front edge of the case and including a locking button that makes it impossible to accidentally start a recording. The controls on the left edge of the case are similar to tape recorder controls, and include (from right to left) the Audio Lock, the Record button (hold it down and speak, let it up to stop recording), the Play Next and Play Previous buttons. The last two buttons let you replay recorded messages without opening the 680 – a very handy feature. Recording and playback is a breeze. HP did away with the annoying white "memo-record" button that kept getting accidentally pressed on the 620/660LX. Actually, the LED is still there and flashes red to remind you of pending appointments. HP just eliminated the record feature of this button.

Unfortunately, the 680's speaker is small and on the bottom of the unit. With the sound turned up, playback is reasonably audible but is rather tinny sounding. If you keep your 680 in a briefcase or leather case (like I do) these sounds are muffled and easy to miss, even with the volume turned all the way up. I realize you can't put a super-loud, hi-fi speaker in something this size, but HP might want to put a little attention on the placement of the speaker for the next version of the 680. Even a mono or stereo headphone jack would be a welcome addition on future Jornadas utilizing this form factor. It would provide better listening quality for memos. It might even let you enjoy the new MP3 standard of recorded music. (A Windows CE MP3 player is available from XAudio, Web: www.xaudio.com/wince/).

Be careful with the ingenious PC Card / CompactFlash slot

The 680 comes with a Type II PC Card slot that lets you add storage memory and use PC Card I/O devices such as Ethernet LAN adapters, wireless modems and more. At first look, I could not find a CompactFlash slot on the 680. On close examination, it's there, piggy-backed onto the full sized, type II PC Card slot and is accessed from the bottom of the case (see

Screen 1). You have to open a hinged trap door to get access to the slot. It's a rather ingenious arrangement, but a little difficult to use. It also looks and feels a little fragile, so handle with care and make certain you carefully read the instructions on how to use and access this feature.

When you slip the larger PC Card into its slot, the whole Compact slot arrangement expands down out of the bottom of the 680, leaving a small protrusion about the size and thickness of a PC Card on the bottom of the 680. With a PC Card in the slot, the 680 no longer rests evenly on a flat surface. You have to flip down a small support piece on the opposite end of the unit to stabilize it.

I was mildly disappointed to find out that the Compact slot is a "Type I" slot. This means that it will not accept the newer Type II Compact cards coming out. For example, IBM has developed a 540-megabyte Type II compact "Hard Drive" card; Motorola has created a two-way Paging card that will turn you PDA into a complete 2-way communications device; SanDisk, Pretec, and other developers are coming out with super high capacity CompactFlash cards. Fortunately, the 680's larger PC Card slot is Type II (CF+) compatible. You can use a Compact-to-PC Card adapter to insert any of the newer CompactFlash Plus cards into the larger PC Card slot. (Interesting note: Hewlett-Packard seems to have fixed a problem associated with applications installed on memory cards. When you reboot or reset an H/PC, one of the first things it tries to do is display the H/PC desktop before it tries to read an external memory card. You can get a message indicating the H/PC can't find the application(s) installed on the memory card, and the desktop icons do not appear properly. The Jornada 680 did not have this problem.

Additional hardware improvements

With any electronic device, and especially computers, one of the surest and simplest ways to fix a problem that just won't go away, is to turn the device off and back on again. With the Jornada 680 (or any Windows CE device) this means pressing the "reset" button. Conveniently, HP placed the 680's reset button on the keyboard, right next to the "Q" key. It's recessed so you won't accidentally press it, but it's right there when you need it.

HP improved its docking cradle from the previous 600LX series. The Jornada 680 snaps quickly and easily into this sturdy base, letting you power your 680, recharge its batteries, synchronize your data with your desktop PC, and install third-party software on your Handheld PC Pro. The cradle will accept a Jornada 680 with the standard (7-hour) or optional (21-hour) rechargeable battery. The 21-hour battery sticks out the back of the 680's battery compartment, adding about an inch to the width of the Jornada. I found the 21-hour rechargeable battery available in the U.S. for $109.95 at MobilePlanet (www.mobileplanet.com). It should be available through HP dealers world wide. (Note: 600LX series batteries are NOT compatible with the Jornada 680.) For day-to-day use, you probably wouldn't want the width and weight of the 21-hour battery, but it might make sense if you take long trips.

The 680's AC power adapter is a little larger than previous models, consisting of a "power brick" and two separate cords. Note that the AC adapter from the 620LX and 660LX work with the Jornada 680 and are smaller, simpler, and more portable. If you want to purchase a spare AC adapter for the 680, you might consider that. The synchronization cable included with the 680 is identical to those used with the Jornada 420, 820, and the 620/660LX.

The stylus, housed in a slot on the front of the unit, has a unique spring release mechanism built into the "chrome" head. The stylus is released by pressing on the front of flat portion of the chrome head extension. The stylus has a clip on one end, and clips into your shirt pocket just like a pen.

H/PC Pro software from Microsoft

The Jornada 680 uses the Microsoft Windows CE 2.11 operating system and Microsoft's Handheld PC Professional Edition "Pocket" applications. These include Pocket Excel, Word, PowerPoint, Access, Internet Explorer, and Outlook (with Calendar, Contacts, Tasks and InBox). Also built in from Microsoft are a host of accessories, utilities, communications features, Windows Explorer, and a new application called "InkWriter" (see Screen 2), which lets you make and store handwritten notes and simple sketches. The big change with the built-in applications is the addition of Microsoft Pocket Access (see Screen 3), a diminutive version of Microsoft's popular desktop PC database program. Users can create Access databases on either desktop or H/PC and keep the data synchronized between platforms. Pocket Access stores its data on external storage devices (like PC storage cards), allowing access to very large databases from small devices like the Jornada 680.

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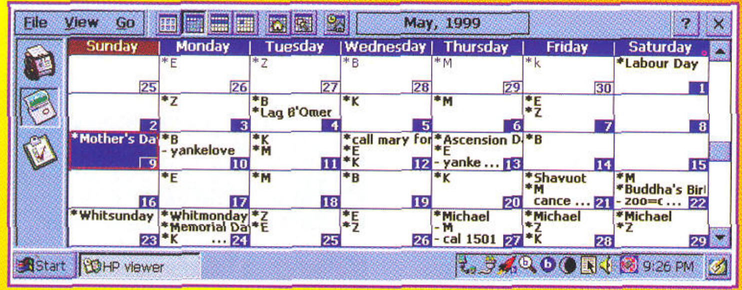
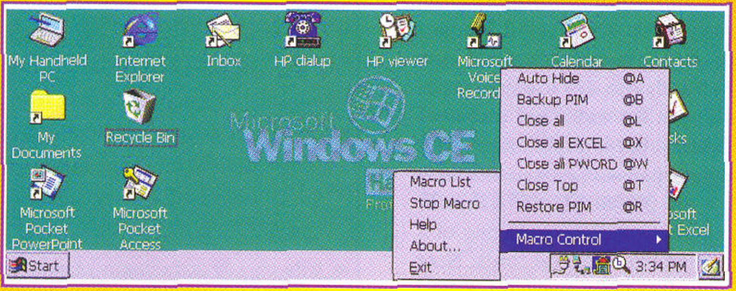
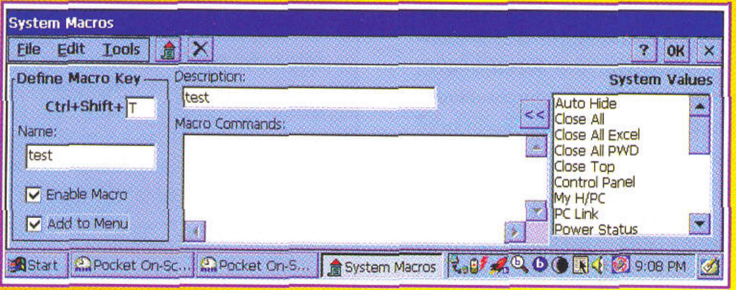

File View Go
May, 1999
?
Start
HP viewer
9:26 PM

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
25	*E 26	*Z 27	*B 28	*M 29	*k 30	*Labour Day 1
2	*Z 3	*B *Lag B'Omer 4	*K 5	*M 6	*E *Z 7	8
*Mother's Da 9	*B - yankelove 10	*K *M 11	*call mary for *E *K 12	*Ascension D *E - yanke ... 13	*B 14	15
16	*E 17	*M 18	*B 19	*K 20	*Shavuot *M cance ... 21	*M *Buddha's Birl - zoo=c ... 22
*Whitsunday 23	*Whitmonday *Memorial Da *K ... 24	*Z *E 25	*E *Z 26	*Michael - M - cal 1501 27	*Michael *Z *K 28	*Michael *Z 29

Screen 6: HP Viewer provides a single screen to view and navigate between Pocket Calendar, Contacts, and Tasks. The HP Viewer month-at-a-glance Calendar view is shown here. Tap on the icons on the left to access Contacts and Tasks.


My Handheld PC
Internet Explorer
Inbox
HP dialup
HP viewer
Microsoft Voice Recorder
Calendar
Contacts
My Documents
Recycle Bin
Microsoft Windows CE
Microsoft Pocket PowerPoint
Microsoft Pocket Access
Microsoft Excel
Macro List
Stop Macro
Help
About...
Exit
Auto Hide @A
Backup PIM @B
Close all @L
Close all EXCEL @X
Close all PWORD @W
Close Top @T
Restore PIM @R
Macro Control
Start
3:34 PM

Screen 7: Tap on the HP Macro icon in the taskbar to display a list of macros. Tap on the desired macro (or use its shortcut keys) to activate the macro.


System Macros
File Edit Tools
? OK
Define Macro Key
Macro Commands:
System Values
<<
Auto Hide
Close All
Close All Excel
Close All PWD
Close Top
Control Panel
My H/PC
PC Link
Power Status
Start
Pocket On-Sc...
Pocket On-S...
System Macros
9:08 PM

Ctrl+Shift+ T

Name: test

Description: test

☑ Enable Macro

☑ Add to Menu

Screen 8: The HP Macro utilities "New Macro" screen lets you use the HP Macro Programming Language to create or modify macros. You can also record macros on the fly.

HP bonus software adds breadth

As nice as the above applications may sound, you'll find them on Handheld PC Pros from any of a number of manufacturers. What differentiates the 680 is the add-on software that HP included. This includes the following:

HP Backup (see Screen 4) – this comprehensive built-in backup/restore utility lets you can quickly and easily back up your entire 680, or just the Pocket Outlook data onto a PC or CompactFlash storage card to have a portable fail-safe method of protecting your data. (The older 600LX series also came with this utility. You can use this backup/-restore feature if you're upgrading from a 620/660LX to restore data backed up from the older device to the new Jornada 680.) Unfortunately, this is an "all or none" proposition. Other than the ability to only backup Pocket Outlook data, there are no provisions for other partial backups and/or restores. If you need such capability, I highly recommend bSQUARE's backup utility (www.bsquare.com; see review, page 22, Mar/Apr 99 issue of *Handheld PC Magazine*). Whatever method you use, I always recommend that you backup often!

HP Dialup – HP simplifies the ordeal of setting up your Internet service provider (ISP) and e-mail account with this application. HP Dialup is a step-by-step "wizard" that takes you through this rather detailed process, making it painless and virtually foolproof. Of course, you must first have an ISP and know the appropriate dialup numbers for your area. (If you do not have a dedicated ISP, now may be the ideal time to try one out.) Once the HP Dialup is completed, you can connect to your ISP with the 680's internal 56k modem and retrieve your e-mail using Pocket InBox, or browse the Web with Pocket Internet Explorer. HP Dialup does not help configure your 680 for AOL, CompuServe, or Prodigy.

HP Quick Pad (see Screen 5) – an incredibly useful program that lets you quickly enter random information for later "through-put" to Calendar, Contacts, Tasks, Pocket Word, or as an e-mail message. For example, let's say I want to send a memo to Rich Hall about an article I want to write for *Handheld PC Magazine*. I open Quick Pad and start writing the memo. When it's done and I'm ready to send it to Rich, I forward it from Quick Pad to InBox, address the message and send it off. I could have forwarded it to Pocket Word and printed it out, or forwarded it to my Tasks list for later action. This is an incredibly useful program that will have you asking, "Why didn't somebody think of that sooner?"

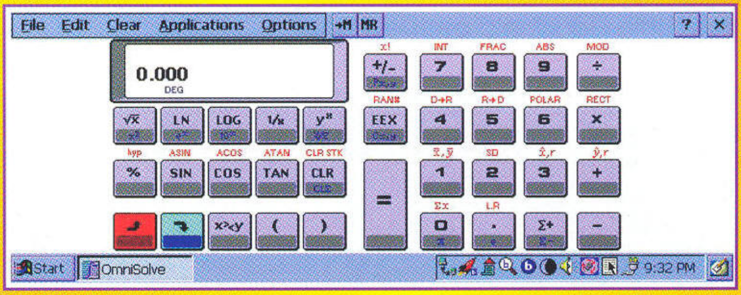
HP Viewer (see Screen 6) – provides a single screen to view and navigate between Pocket Calendar, Contacts, and Tasks. HP Viewer opens up with a detailed month-at-a-glance view of your Calendar. While Pocket Calendar has a similar view, it does not list specific appointments. I did have problems viewing my extensive contact data with the HP Viewer. I have about 1000 contacts, and when I try to access the HP Viewer's Contact view, my 680 goes into terminal "hourglass" mode, forcing me to reset the machine. HP is aware fo the problem with the HP Viewer and is working on a fix that will be downloadable from HP's Web site this summer. HP Viewer replaces the calendar view icon found on the task bar of the 620/660LX.

[EDITOR'S NOTE: I got the perpetual hourglass the first time I accessed my Contacts from HP Viewer, with a list of 135 Contacts. I reset the 680, went back into HP Viewer, and had no further problem viewing Contacts – Rich Hall.]

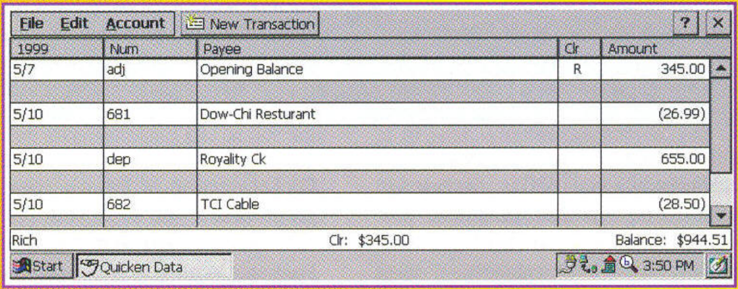
HP Hot Keys – as mentioned above, the hard and soft icons are "re-programmable" to suit the needs of the user. THis makes customizing the hot keys a breeze. Although this is possible on many H/PCs by editing the Windows CE registry, it can be a risky proposition.

HP Settings – this utility lets you change many of the 680's settings and configure a system-wide password – whenever you power on your 680 you're asked for the password. (Note: Pocket Word and Excel have options for encrypting a specific document.) Many users avoid using password protection because the H/PCs power down automatically to conserve battery life. New to the pas word protection utility is a delay feature th suspends the activation of password protection for a user-definable length of time.

HP Macro (see Screens 7 & 8) – The



Screen 9: OmniSolve is a forms-based financial problem solver that includes amortization, currency and unit conversions, data calculations, retail percentages, and investment analysis. Shown here is OmniSolve's calculator screen.



1999	Num	Payee	Clr	Amount
5/7	adj	Opening Balance	R	345.00
5/10	681	Dow-Chi Resturant		(26.99)
5/10	dep	Royality Ck		655.00
5/10	682	TCI Cable		(28.50)

Rich Clr: $345.00 Balance: $944.51

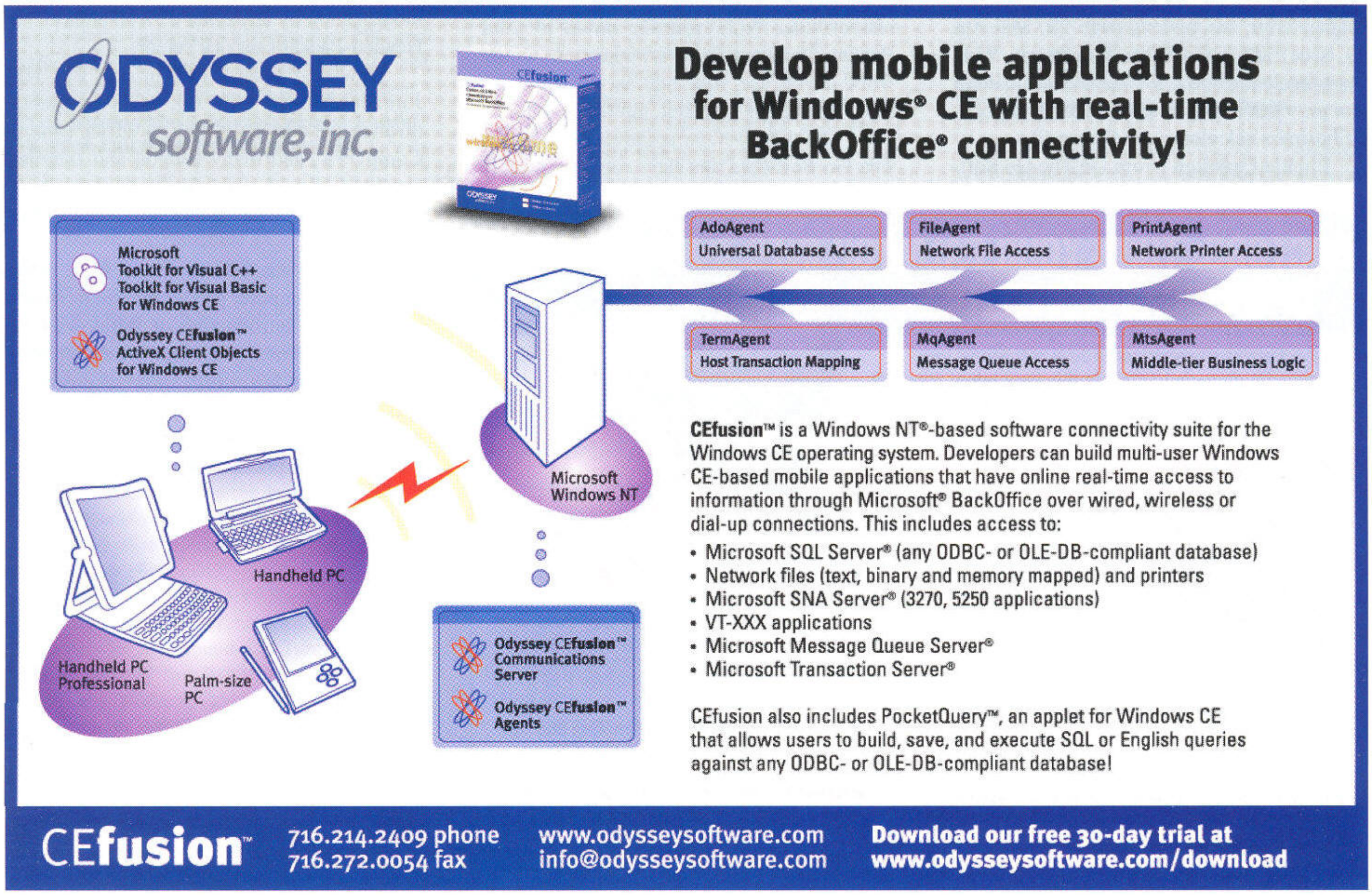
Screen 10: A Pocket version of Intuit's popular Quicken program lets you track your personal finances on your 680 and "synchronize" your Pocket Quicken data with your desktop Quicken.

Jornada 680 comes with this built-in macro utility, along with a number of pre-recorded macros. A macro is an automated sequence of keystrokes that is activated by pressing a combination of keys, or tapping on the macro name in a list. For example, if you press the Ctrl-Shift-B (at the same time) you run a built-in macro that backs up your Pocket Outlook databases. Press Ctrl-Shift-A to do a complete system backup. The HP Macro icon is present on the taskbar (it looks like a tiny green house with a red roof). Tap on the icon to display a list of macros (see Screen 7). Tap on the desired macro to run it. At the bottom of the list is the "Macro Control" option. Select this, and then "Macro List" and you get a more detailed list of the macros.

From this view you can also create your own macros by selecting "New Macro" from the Edit menu (see Screen 8). HP Macro uses the HP Macro Programming Language to create the macro "scripts." You can write the macro using macro commands, or record the macro on the fly. The documentation in the manual is virtually non-existent, and the on-board help files are not much better. Hopefully, HP will post additional documentation in the near future. This is potentially one of the most useful utilities to come with the 680, and one that will probably be very popular with the more technically-oriented users.

Additional software from third parties

HP includes six additional programs with the Jornada 680. Some of them are built into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MqAgent Message Queue Access
MtsAgent Middle-tier Business Logic

Microsoft Windows NT
Handheld PC
Handheld PC Professional
Palm-size PC

Odyssey CEfusion™ Communications Server
Odyssey CEfusion™ Agents

CEfusion™ is a Windows NT®-based software connectivity suite for the Windows CE operating system. Developers can build multi-user Windows CE-based mobile applications that have online real-time access to information through Microsoft® BackOffice over wired, wireless or dial-up connections. This includes access to:

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- Microsoft SNA Server® (3270, 5250 applications)
- VT-XXX applications
- Microsoft Message Queue Server®
- Microsoft Transaction Server®

CEfusion also includes PocketQuery™, an applet for Windows CE that allows users to build, save, and execute SQL or English queries against any ODBC- or OLE-DB-compliant database!

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Getting a good price online

Hewlett-Packard has priced the HP Jornada 680 at $899.00. It is available at Office Depot, CompUSA, and many catalog and Internet purchase sites. I was able to find the best price on the Internet at buy.com (www.buycom). If you shop their Website, you will notice that their price will vary from day to day. (I have seen it go from $711.99 to $747.99 in one day.) I talked with someone in buy.com's management and they explained that they shop for the lowest prices every 6 hours or so, and adjust their posted prices accordingly. If buy.com lowers its price after it ships, you are not price protected. All of their products are fully warranted with the U.S. warranty (if purchased for U.S. usage). buy.com's support and return policy is very consumer-friendly and hassle free. I strongly recommend that you check out this site for your Internet purchases. At the very least, it will give you an idea about the price range of a product.

ROM. Others come on the Jornada CD ROM, to be installed while your 680 is connected to your desktop PC. The user installable programs include TrueSync 2.0 (StarFish; Web: www.starfish.com; for downloading Pocket Outlook date to the Franklin REX card, (www.franklin.com/rex), Image Expert CE (Sierra Imaging; Web: www.sierraimaging.com; a digital camera linking program); Outside In (Inso Corporation; Web: www.inso.com; an e-mail attachment viewer); and Pocket Quicken (more on this below). Three additional programs are built into the 680: bFIND and bFAX Pro (bSQUARE, www.bsquare.com; see review, page 22, Mar/Apr 99 issue) and OmniSolve (Landware; Web: www.landware.com; a financial calculator that provides the same features as HP's popular business calculator; see Screen 9).

Pocket Quicken (from On The Go Software, www.onthegosoftware.com) — This Pocket version of Intuit's popular Quicken program lets you track your personal finances on your 680 and "synchronize" your Pocket Quicken data with your desktop Quicken to keep your accounts up to date (see Screen 10). I use the word "synchronize" loosely, because much of it is a one-way transaction. Any transactions entered into Pocket Quicken will synchronize (upload) to your desktop Quicken, but the only data that "synchronizes" from your desktop PC to the 680 are the account names and final balances of each. The transaction history does NOT transfer down to your Pocket Quicken. This arrangement would work if you use your 680 as your primary input device for Quicken, but that's not how I use Quicken. I have recommended to On The Go Software that they consider a more complete two-way transfer of data from desktop Quicken to Pocket Quicken and vice-versa. Pocket Quicken is due for solo release sometime in June, 1999; and according to a source at On The Go Software, it may be somewhat different than the version that is currently shipping with the 680.)

[EDITOR'S NOTE about Microsoft PowerToys 2.0: I tried to install the whole thing on the 680. It kept crashing the control panel. The problem seems to be with the "Control Panel Annunciator" application in PowerToys. I advise you not to install that application. The rest of PowerToys seems to work fine.]

Shop around

Hewlett-Packard has never been far off the top of any list for service and quality. I expect that this machine will continue that trend. If you need help with the HP 680 you can call a 970 number (toll call) for support and service or 800-443-1254 for automated toll-free pre-sales information. The HP Jornada 680 comes with a limited one-year warranty. The warranty doesn't cover backup battery and does not apply if the 680 has been damaged by accident or misuse. The warranty is also voided as the result of a service or modification by any other than an authorized Hewlett-Packard service center.

Hewlett-Packard has priced the HP Jornada 680 at $899.00. It is available through HP dealers as well as Office Depot, CompUSA, and many catalog and Internet purchase sites. I was able to find the best price on the Internet at buy.com (see sidebar above).

HP's Jornada 680 is one of best, most innovative computer products to hit the market since the introduction of Windows CE. Its small stature, small but typeable keyboard, bright beautiful color touchscreen and enhanced functionality make it a natural for handheld users who want to carry power in their pocket. ■

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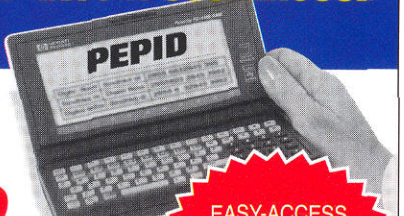

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HP Jornada External Keyboard

[EDITOR'S NOTE: As one reader emphasized recently, the word "touch-typeable" is a subjective evaluation (actually, he used stronger words than that). This gentleman did not even think that the keyboards on the larger H/PCs and H/PC Pros were useable by a touch typist. Ed Zabrek and a number of other reviewers love the keyboard on the Jornada 680, but that love is contextual. It's the best keyboard available for a small, pocketable Handheld PC – one you can pop in your pocket and carry with you wherever you are. HP recognizes the 680 for what it is and offers this larger, more-touch-typeable external keyboard for the Jornada series of PC Companions – Rich Hall.]

BY TODD OGASAWARA

HP's Jornada External Keyboard is about the size of a small notebook PC keyboard (see Screen 1), similar to the keyboard on HP's new Jornada 820 H/PC Pro mini-notebook. The keyboard comes with a permanently attached serial cable used to connect to the serial port of any HP 300LX-or-above Windows CE Handheld PC. It also connects to HP's Jornada 420 Palm-size PC via the 420's docking cradle. The package also includes a 3.5" floppy disk with installable software drivers for the various HP devices.

The external keyboard has six rows of keys. The top row consists of 8 function (F-keys) and 4 dedicated application launch keys. The rest of the keyboard is similar to a standard desktop PC keyboard, except that it does not have a separate numeric keypad. The key size and spacing are, according to HP, 90% of a full-size keyboard. Large enough, I found, to touch type on easily.

Tested with an H/PC and Palm-size PC

I tested the keyboard with a Hewlett-Packard 620LX H/PC and a Jornada 420 Palm-size PC. Software drivers must be installed on each HP device you want to use with the External Keyboard. This is a simple matter of connecting your Jornada to a desktop PC, running Windows CE Services ActiveSync, and then running the installation program from the 3.5" disk that comes with the External Keyboard.

Screen 1: Jornada External Keyboard

The next step is to physically connect the keyboard's cable to the Jornada. The keyboard connects directly to the 620's serial port, and to the 420 through its docking cradle. Finally, you activate the keyboard driver from a Start menu option on the 420 or 620. The keyboard driver detects whether or not a keyboard is attached and enables its use when it is attached. (Note: if you reboot your HP Jornada, you'll have to activate the keyboard driver again from the Start menu.)

New ways to use your HP Jornadas

The External Keyboard lets you use your HP Jornada in new and more productive ways. For example, it becomes easier to write longer e-mail, compose memos or notes, or do any other keyboard-intensive task. This is especially true with the 420 Palm-size PC, but also with HP's Windows CE handheld PCs. For a while now, I've carried around an NEC MobilePro 750C. This mini-notebook-sized H/PC has a larger keyboard that is easy to touch type on. The HP 620LX is much easier to carry around, but its smaller keyboard is harder to use.

The External Keyboard lets me use the 620LX all day, mostly as a data access and retrieval device, and then connect up to the keyboard for the typing-intensive tasks like writing reports, longer e-mails, and the like. The keyboard can stay in my luggage, or in my briefcase most of the time.

I would have preferred to be able to connect the Jornada 420 Palm-size PC directly to the keyboard, instead of through the docking cradle. The way it's set up now, you have to take the cradle with you to use the keyboard. It's just one more piece of equipment you have to carry around and connect up. However, the advantage of using the cradle is that it holds the 420 upright on a desk, making it easier to see the screen while you type. I don't mind the shortness of the keyboard's cable, but it is relatively stiff, which makes positioning the keyboard and 420 a bit difficult.

I found the 90% sized keyboard very comfortable to use. The HP Jornada External Keyboard is an excellent solution to the dilemma of wanting a PC Companion that's small enough to carry in your pocket, but easy to touch type on. You can carry around one of the smaller HP PC Companions, and keep the External Keyboard close at hand (in your briefcase, car, or hotel room), ready when you need it.

There are three very special function keys that help you keep your hands on the keyboard, and off the stylus. The "OK" and "Cancel" keys let you move through window prompts without having to pull out your stylus and tap on the screen. And the "task switch" key lets you move between applications from the keyboard. These keys speed things up quite a bit.

I bought Hewlett-Packard's new Jornada External Keyboard for $80 at a local CompUSA store in Hawaii. It comes with a carrying case and floppy disk with software drivers for the various HP devices. For more information, contact your local Hewlett-Packard dealer or visit HP's Jornada Web site, www.hp.com/jornada/ products.html, and go to the Accessories section. ■

[Todd's complete comments on the HP External Keyboard can be found on his Web site at to-tech.com/windowsce/jornada/keyboard/index.html.]

Todd Ogasawara is the forum manager of the Microsoft Network, Computing Central, Windows CE Forum and Telephony Forum. He has been working with computers of all sizes and with all kinds of operating systems since the mid-1970s. He lives in Hawaii with his wife and daughter. The Windows CE forum is found at: computing central.msn.com/forums/windowsce/.

Compaq Aero 2100

Visible in Any Light!

Compaq joins the Palm-size PC market with a revolutionary new screen you can see just about anywhere.

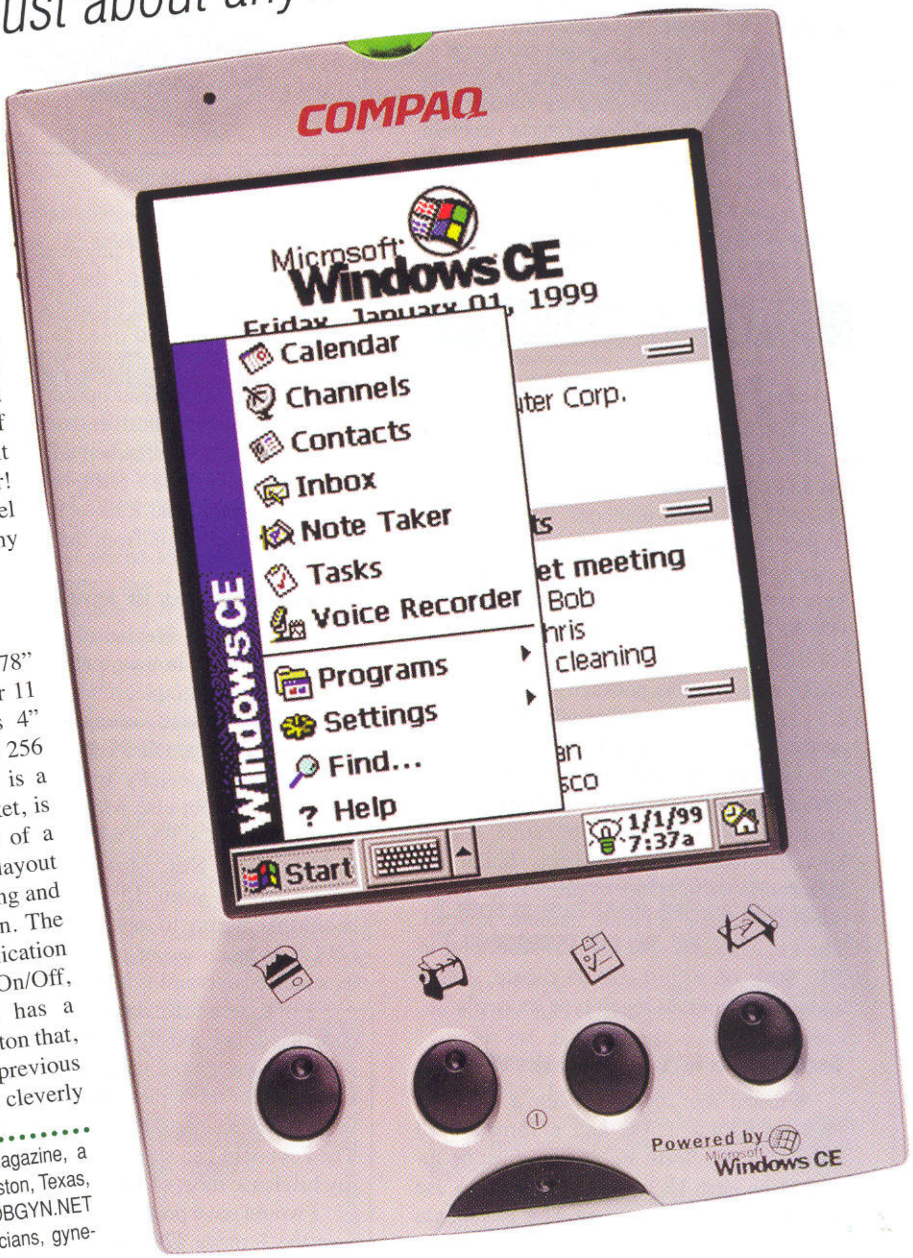
BY ED ZABREK, M.D.

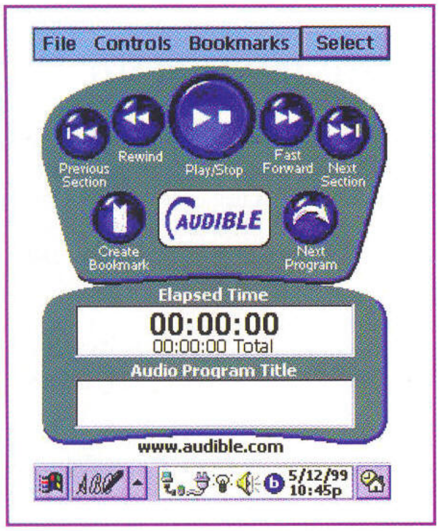
The first thing you notice about the new Compaq Aero 2100 is its silver case. It strikes you as futuristic and even "Aero" dynamic. But the real advance in this color-screen Palm-size PC is its "high-reflective" Thin Film Transistor (HR-TFT) color screen. If you've ever tried to use a handheld device under less than optimal lighting conditions, you will really appreciate this new Aero. Turn it on outdoors, in bright sunlight, (say, in your car, or on the golf course), and the screen does not washout; in fact, it becomes more readable, and uses less battery power! If you do not have sufficient ambient light, a two-level "front light" will give you a picture as pretty as any portable device available today.

Easy-to-use design

The Aero 2100 measures 5.27" x 3.34" x .78" (13.4 x 8.5 x 2.0 cm), and weighs in at just under 11 ozs. The crisp touch-sensitive screen measures 4" diagonal, and has a resolution of 240 x 320 with 256 colors with a .24mm dot pitch. The processor is a 70MHz MIPS, while not the fastest in the market, is more than adequate for the normal functions of a Palm-size PC running Windows CE. The button layout is sensibly positioned; unintended voice recording and inadvertent application launches do not happen. The front panel has 5 buttons (4 programmable application buttons, and non-changeable combination On/Off, "front light" button. The left side panel has a jog/action wheel, and an application "exit" button that, when activated, will instantly take you to the previous screen. The indented left corner of the 2100 cleverly

Ed is Medical Editor of Handheld PC Magazine, a practicing obstetrician-gynecologist in Houston, Texas, and chief technology correspondent for OBGYN.NET (www.obgyn.net), a Web site for obstetricians, gynecologists, and related industry persons.

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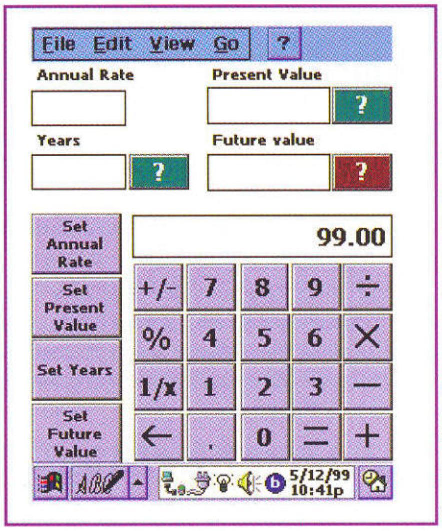
Screen 1: The Audible player lets you download and listen to audio books, reports, magazines, and more. Shown here is the Audible application screen on the Aero 2100 Palm-size PC.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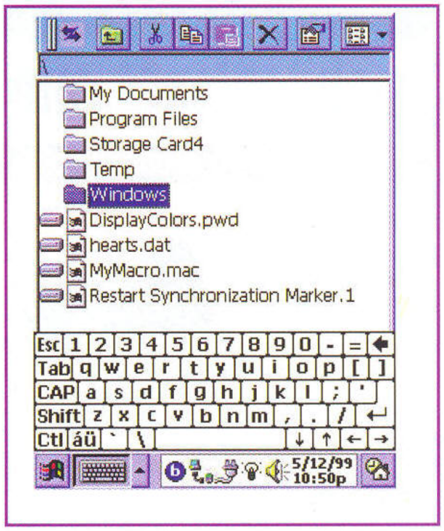
Screen 2: Cool Calc is eight calculators in one, and is available for the Palm-size and Handheld PCs. Shown here is Cool Calc's Time Value of Money calculator.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Screen 3: Palm Explorer adds an Explorer-type application to your Palm-size PC.

contains the voice recorder button. The physical configuration of this button makes inadvertent recordings nearly impossible. This button is also programmable with the included software. Since I rarely use the recording feature, I have programmed this button with a Grundle Software's "Palm Explorer" (from Grundle Software, www.grundlesoftware.com, see comments below and Screen 3).

The Aero has a built-in microphone that sits on the top front of the unit. There is also an earphone jack that accepts a standard mono earphone as well as the included combination earphone/microphone for private playback/recording. The type II CompactFlash Plus (CF+) card slot sits on the top center of the Aero and is ready to take on the newest CF+ modems (both wired and wireless), Motorola's soon to be released Flex 1-way pager card, storage cards, and "mini hard drives." The Aero 2100's CF slot is shielded, preventing wireless communication cards from distorting the display and disrupting the microprocessor. An IR port and spring loaded, locking stylus is also found on the top of the Aero.

The Aero 2100 does not have a built-in modem (nor does any color-screen Ps/PC, yet). But Compaq sells a 56k CompactFlash+ modem card as an option, and CF+ modems are available from a number of other manufacturers. Unfortunately, if you use the Compact slot for communications, you cannot use it for data storage. If you need extra data storage while using a modem, opt for the 16MB version of the Aero. You can even upgrade the 8 or 16MB Aero to 24MB of internal memory with a user-installable upgrade chip. A combination charging base-modem, like the one offered with the Nino 500, would be a welcomed addition.

PC Docking

The included docking cradle is hardwired with the PC sync cable. It also contains the DC jack for powering and charging

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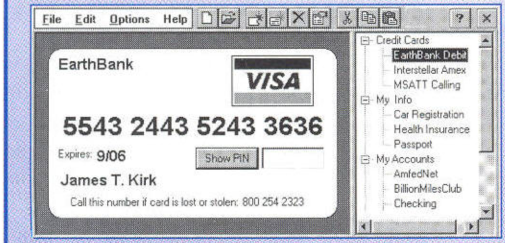
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Software included: HP Jornada viewer, PIM Translation Utility, bFIND, bFAX, LandWare OmniSolve, Pocket Quicken and much more!
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Third-Party Applications Improve Any Palm-size PC

In my opinion, all of the different manufacturers' Palm-sized PCs, including the Aero 2100 series, are missing some things and benefit from the addition of third-party software. I've found that Grundle Software makes several essential utilities that enhance the Palm-size PC's functionality, and make using it easier. Two programs I cannot live without are Palm Explorer and Fast Task, shareware programs available for under $15.00 each, and downloadable from Grundle's Website (www.grundle software.com).

Palm Explorer (see Screen 3) lets you maneuver through your files and folders much the same as the explorer found on other Windows operating systems (H/PC, 95, 98, NT). As mentioned earlier, I have reprogrammed my Task button so that it will instantly launch the Palm Explorer.

Fast Task solves the problem I call "program build-up." Many Palm-size PC applications don't let you exit the program. You just start the new application on top of the old one. Fast Task loads onto your task bar and gives you options to close individual programs or all opened programs. It also keeps a list of all opened program and allows for selective re-opening without re-launching the application.

your 2100. An optional configuration (Aero 2150) has an extra Lithium Ion battery, and a docking cradle that comes with an additional battery-charging slot.

Software: built-in and bundled

The Aero 2100 comes with the standard Microsoft Windows CE operating system and built-in Palm-size PC applications. These include Microsoft Pocket Calendar, Contacts, Tasks, and InBox. Palm-size PCs also come with Notetaker, Mobile Channels (for viewing Web content), and various utilities and set-up apps. In addition, Compaq includes a CompactFlash backup/restore program.

Compaq also includes a CD ROM full of additional software you can install on your Aero, adding exciting functions and features to the 2100. The CD ROM includes the following titles:

Audible (see Screen 1) – an enhanced audio program from Audible.com (www.audible.com/compaq) turns the 2100 into an audio information and entertainment device. Thousands of audio books, business reports, magazines, and classic books are available for purchase to play on your Aero 2100. Audible even makes possible "on-demand" radio from Nightly Business Report, Car Talk, and other sources. The Aero's small speaker is one of the best on any Palm-size PC. I could hear voice memos and Audible books without difficulty, even when I was in my car in the middle of Houston traffic.

Finance (VCA Systems, www.vca.de) – an expense manager that lets you capture monetary transactions and record deposits, withdrawals and planned expenses. You can record transactions using different currencies and upload data to Quicken or MS Money.

Cool Calc (Applian Technologies, www.applian.com) – adds multiple calculators to a PC Companion (see Screen 2). The program includes 2 scientific calculators, a currency converter, several financial calculators, and an option to create your own calculator with the functions you want. Programming the "new" calculators was not as easy as using the rest of Cool Calc's features. Fortunately, step-by-step documentation is included on the CD.

Available Compaq Accessories

Compaq offers the following accessories for the Aero. Deluxe Cradle (as described with the Aero 2150 above); additional Lithium-Ion batteries; 24MB Memory Expansion Module (an easy upgrade, but make sure you backup to your PC first!); Compaq 56k CompactFlash+ Modem card; 20MB and 40MB CompactFlash storage cards; Auto-Sync Cable for connecting to portables or for synchronizing to a second PC; Stylus 3-Pack; Automobile power adapter.

As I've mentioned, the Aero's screen is one of the best I have ever seen (or used). The included add-on audio software makes the 2100 a truly versatile device. I would like to have better documentation for the add-on software, and a built-in modem could have made this device nearly perfe In spite of these minor shortcomings, this i one device that fills a need in a broad market. I won't leave home without it! ■

Products

Live Links
to the Web sites
mentioned in this section!
www.hpcmag.com
YOUR GATEWAY TO
WINDOWS CE!

The PC Companion Products listed here include hardware, software, publications, events, and developer services for Windows CE. Information about the H/PCs and Palm-size PCs themselves can be found in our "At A Glance" section on page 47. Prices listed are suggested retail price. Many software products are available for online downloading. Listings do not represent an endorsement by the editors. We have tried to include a comprehensive collection of products and services available by mid-May 1999. However, there will be gaps due to information not arriving by our printing deadline. If you have a product to announce in our next issue, please send an e-mail message to editor@thaddeus.com. For live links to the Web sites mentioned in this section, visit our Web site at www.hpcmag.com.

Hardware

Accessories

KONEXX AutoSet

A portable telephone modem interface that converts a digital phone line signal to analog. PC Companion built-in modems, and most PC and CF card modems work with analog lines only. This device lets you connect them to phone lines in an office or hotel environment where digital phone lines are the norm. AutoSet is compact, can be used with: a 9v battery or AC adapter, and be used world wide.

Price: $199
Contact: KONEXX
Phone: 800-275-6354
Web: www.konexx.com (select "Products")

KONEXX ModemMinder

Protects modems from damage if you accidentally connected it to a digital phone line. ModemMinder is a very small unit (1.25 x 1 x 3 inches) that connects between the modem and the telephone line. ModemMinder provides continuous protection from hazardous current and current surges and never needs to be disconnected from the telephone line.

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Phone: 800-275-6354
Web: www.konexx.com (select "Products")

Cases

Micromine Environmental Case

A dust and weatherproof case for the Hewlett-ackard 300 series of Handheld PCs. Manufactured om precision-engineered aluminium, Field Marshal comes with built-in shock absorption and molded latex panels for the keyboard and screen. Data transfer and recharging facilitated via an easily removed rear port seal. Micromine also markets Field Marshal infield data collection software to integrate with the HP handheld PC and enviromental case. Field Marshal is designed for those who need to use the power of an H/PC in unfriendly environments.

Price: $350 for Case only $420 for software
Use with: HP 300 series H/PCs
Contact: Micromine
E-mail: Sales@micromine.com.au
Web: www.micromine.com

Satellite Carrying Case

The Satellite is a compact carrying case (11 x 6 x 2 inches) that can expand up to twice its size to hold everything that you need to carry. This case is padded and made of leather (Black or Tan with Black trim). The Satellite is also available in Ballistic Nylon with Leather trim. There are a wide variety of accessories available to make the Satellite customized to meet your needs. Bundles are also available with additional savings. Fits units up to 9.6 x 5.2 x 1.1 inches including the MobilePro 770. See website for product features, pricing, compatibility, and pictures.

Price: $89.95 (Ballistic Nylon Version, see site for pricing/info)
Use with: H/PC and Ps/PC
Contact: PDA Concepts
Phone: 801-965-9141; Fax: 603-710-7689
Email: sales@pda-concepts.com
Web: www.pda-concepts.com

Connectivity

ActiveBridge TelnetCE

A terminal emulation product that enables handheld and palm-size PC users to connect to applications running on Unix and IBM hosts. ActiveBridge TelnetCE provides HPC, HPC pro, and Palm-size CE users connectivity to IBM Mainframes, AS/400, and UNIX systems.

Price: N/A
30-day evaluation download at www.telnetce.com
Use with: H/PC, Ps/PC and H/PC Pro
Contact: Point Information Network
Phone: 888-699-9283 or 425-823-0111
Fax: 425-823-0143
Email: marketing@pin-corp.com
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Newton Keyboard WinCE Adapter

Connection cable designed to connect your Newton Keyboard to your Handheld or Palm-size PC. Cable includes complete instructions on making the connection and where to obtain free software drivers. Connects Windows CE device's synch cable DB9 connector to Newton keyboard. Note: Some Palm-size PCs require connection through cradle.

Price: $19.95
Use with: Any Windows CE Device
Contact: PDA Concepts
Phone: 801-965-9141; Fax: 603-710-7689
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Web: www.pda-concepts.com

WinCE-Mac Connection Cable

Lets you connect your Windows CE device to your Macintosh. Cable includes complete instructions on making the connection. Connects Windows CE device's synch cable DB9 connector to Macintosh 8 pin mini DIN. Serial to USB converter required for USB connection. PC emulator such as Virtual PC or SoftWindows required.

Price: $21.95
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PC/CF Card Readers

MagicRAM USB Dual Slot Card Reader

A two-slot CompactFlash and SmartMedia card reader for your desktop PC. Lets you transfer image files and data between your PC Companion (or any device equipped with a CompactFlash or SmardMedia card) and your desktop PC. MagicRAM USB card reader supports 3.3v and 5v SmartMedia cards up to 128MB and the new CompactFlash II digital film format. The USB card reader is an external drive that sits on your desktop and connects to your desktop PC's USB port via a one-meter cable. The USB (Universal Serial Bus) interface allows for daisy chaining of up to 127 devices, which can be connected and disconnected from the computer without the need for reboot.

Price: $129.00
Use with: H/PC
Contact: MagicRAM, Inc.
Phone: 800-272-6242 / 213-413-9999
Fax: 213-413-9778
E-mail: sales@magicram.com
Web: www.magicram.com

PC/CF Cards, Other

Silicom I/O PC Cards

Ethernet PC Card – a high-speed Ethernet adapter PC Card lets you connect your H/PC to your desktop PC or LAN server. Speeds up synchronization, system backups, Internet browsing and e-mail connection.

Silicom Modem 56k PC Card — adds a 56K modem to your H/PC or laptop PC. The card is easily installed and configured on a computer running Windows 95/98/NT4/CE or OSR2.

Silicom Single Serial Card – adds a fast serial port to an H/PC. Installs and configures easily. Lets you attach to bar code scanners, measurement equipment, label printers, and other devices.

Prices: Ethernet PC Card: SPE/PTP - $ 84.90
CardBus Modem56: WMPC56 - $ 99.90
Serial PC Card: SRS - $ 119.90
Use with: H/PC
Contact: Silicom Inc. Connectivity Solutions
Phone: 201-529-1121; Fax: 201-529-0906
Email: sales@silicom-usa.com
Web: www.silicom-usa.com

Custom Windows® CE Development

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- communications

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Desktop PC
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Handheld PC
Microsoft Windows CE

Voyager VGA for H/PC

This VGA adapter card lets you display PocketPowerPoint presentations on VGA monitors and VGA projectors. PowerPoint previews, controls and notes are displayed on the H/PC's display, while the presentation is shown on the Voyager output. Voyager VGA "shadow" feature lets you display a copy of the entire H/PC screen on an external VGA monitor, allowing Voyager to be used as a tool for training and "proof of concept" demonstrations for custom applications.

Price 1-9 units $195. Each (Discounts available for purchases of 20 or more)
Use with: H/PC
Contact: Colorgraphic Communications
Phone: 770-455-3921; Fax: 770-458-0616
E-mail: sales@colorgraphic.net
Web: www.colorgraphic.net

PC/CF Ethernet Cards

Xircom CompactCard Ethernet adapter

The CompactCard Ethernet 10 provides users of Windows CE with connections to 10Mbps networks for enterprise-wide E-mail access, Internet browsing and data synchronization. This CompactCard features BatterySave™ advanced power management for longer battery life, a Windows-based Setup Wizard for easy installation and ships with the Xircom CardCaddy™ converter that enables the CompactCard to fit larger handheld Type II PC Card slots. Xircom CompactCards are Type II CompactFlash cards that support Windows CE-based handheld PCs. Additional CompactCards provide a variety of functions including Ethernet, modem and wireless GSM technologies.

Price: US $149 (Ethernet 10)
Use with: H/PC and Ps/PC
Contact: Xircom
Phone: 800-438-4526 or 805-376-9300
Fax: 805-376-9311
Web: www.xircom.com/compactcard

PC/CF Memory Cards

MagicRAM High Capacity CompactFlash Card

MagicRAM is marketing a new line of high-capacity CompactFlash storage cards in capacities from 8MB to 64MB. Card can be used in a Compact slot or with an adapter in any Type II PC Card slot. MagicRAM CompactFlash card has passed logo testing for Windows CE operating system by Microsoft Hardware Quality Labs.

Price: N/A
Use with: H/PC, Ps/PC
Contact: MagicRAM, Inc.
Phone: 800-272-6242 or 213-413-9999
Fax: 213-413-9778
E-mail: sales@magicram.com
Web: www.magicram.com

Pretec 128 MB CompactFlash Storage Card

Flash data storage card in 128MB capacity. Can be used with adapter to fit into a PC Card slot. A 320 MB version will be available in the Fall of 1999. Pretec offers CF cards in capacities from 2 MB up.

Price: varies
Use with: H/PC, Ps/PC
Contact: Pretec Electronics Corp.
Phone: 510-440-0535; Fax: 510-440-0534
E-mail: cardinfo@pretec.com
Web: www.pretec.com

Pretec CF+ and SmartMedia Adapters

The CF+ adapter turns a Compact Flash memory or I/O card into a Type II PC Card. This lets you use any CF+ card in a PC Card slot. The SmartMedia Adapter turns the smaller SmartMedia storage cards into either the CF+ size or the PC Card size for use in those type of card slots.

Prices: na
Use with: H/PC, Ps/PC
Contact: Pretec Electronics Corp.
Phone: 510-440-0535; Fax: 510-440-0534
E-mail: cardinfo@pretec.com
Web: www.pretec.com

PC/CF Wireless Cards

Aircard 300

A PCMCIA Type II card that adds wireless communications capabilities to H/PC and H/PC Pro machines. Installation requires loading a special software driver and configuring the modem through a small wizard-like program. Once configured, you simply access any Internet-enabled application (such as Pocket Internet Explorer or Pocket Outlook) and Windows CE communicates with it as if it was a modem device.

AirCard 300 puts the cellular radio right into the PC Card, eliminating the need for cabling the Handheld PC to an external phone or modem. AirCard 300 supports 'Alert Mode,' a unique feature which enables the Windows CE computer to receive messages via the AirCard 300 even when the computer is off. Bundled with AirCard 300 are Watcher and WirelessExpert for Windows CE, intuitive, easy-to-use utilities that allow for simple modem installation, configuration and use. Monitor your service connection, radio signal trength and other useful information through these dispensable graphical user tools.

Price N/A
Contact: Sierra Wireless
Phone: 604-231-1100; Fax: 604-231-1109
Web: www.sierrawireless.com

EthIRLAN

A wireless LAN (WLAN) adapter for connecting portable computers to the corporate enterprise network. It's based on the IrDA standard and targeted at any mobile computer user who requires network access, provides each user with a dedicated 4Mbps connection. EthIRLAN consists of the EthIR Switch, an IR and 10/100BaseT switch and EthIR Beam, a desktop infrared, LAN access point.

Price: Prices vary, contact Clarinet
Use with: H/PC and Ps/PC
Contact: Clarinet Systems, Inc.
Phone: 408-501-0250
Email: info@clarinetsys.com
Web: www.clarinetsys.com

Peripherals

PocketCE Data Storage Devices

Addonics's PocketCE ZIP and SuperDisk are external peripherals that attach to an H/PC via cable and provide users with unlimited file storage to back up data directly onto ZIP media, regular 3.5" floppy disk, or the high capacity 120MB media. The soon-to-be released PocketCE CD-ROM player lets H/PC users access data stored on CD-ROMs. Options include a USB cable for $49.95 and a Battery Pack for $19.00.

Price:
PocketCE ZIP – $269
PocketCE SuperDisk – $249
PocketCE CD-ROM – na
Use with: H/PC
Contact: Addonics Technologies
Phone: 510-438-6530; Fax: 510-353-2020
E-mail: Atc@addonics.com
Web: www.addonics.com

Software

CAD

PocketCAD

A general purpose computer aided design package that runs on handheld computers running the Windows CE operating system. It is based on floating point coordinates rather than integers for flexibility and accuracy. It has an easy to use user interface for quick sketches, or final drafting. It is capable of exchanging drawings with major desktop CAD packages for the purpose of drawing validation and updating in the field.

Price: $169 or $99 to upgrade from PocketVIEW
Use with: H/PC (CE 2.0+)
Download at developer's Web site
Developer: Remote Engineering
Phone: 888-518-9625 or 515-278-0684
E-mail: MikeFe@PocketCAD.com
Web: www.PocketCAD.com

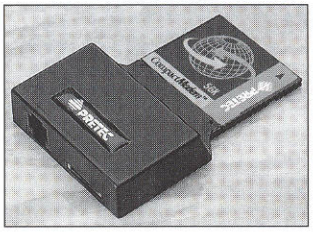
PocketVIEW

A CAD Drawing Viewer compatible with DWG and DXF drawing formats. Designed for mobile professionals who require CAD drawings in their everyday work. Display Tools include Zoom Window, Zoom Extents, Zoom Previous, and Pan. A Layer Dialog Box controls layers. Redlining Tools make it possible to add Polylines and text to be drawings to reflect field information.

Price: $69
Use with: H/PC and Ps/PC (CE 2.0+)
Download at developer's Web site
Developer: Remote Engineering
Phone: 888-518-9625 or 515-278-0684
E-mail: MikeFe@PocketCAD.com
Web: www.PocketCAD.com

World #1:

Compact I/O Cards for PalmPC, Handheld PC



- CompactModem 56K
- CompactSerial, CompactParalell, CompactScan
- CompactFlash™ 4MB-48MB
- ATA Flash cards 4MB-160MB, or 320MB (Type III)
- CompactLan 10BaseT/2

Internet: http://www.pretec.com

PRETEC

(Phone) 510-440-0535 (Fax) 510-440-0534
(Email) cardinfo@pretec.com

Calculator

ArtSGraph

A powerful mathematical/scientific calculator. Use ArtSGraph for simple arithmetic, plotting elementary functions, differential calculus, harmonic analysis, optimization, plotting of equipotential lines and field of directions. Can be used as an effective educational tool for self-instruction and teaching mathematics. User friendly intuitive interface.

Price: $20.00
Use with: H/PC (CE 2.0, SH3, MIPS)
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Developer: ArtSoft
Web: www.artsoft.ru/eng/artsghpc.htm

Dyna Metric

A metric conversion tool that lets engineers convert many units from a variety of sources. A setup utility helps configure units for convention of the selected source. The user can select the different sources.

Freeware
Use with: H/PC and Ps/PC (CE 2.0 & above)
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Developer: ITIL
Web: www.palmix.itil.com

Graphics Plotter

Turns your CE device into a graphic calculator that can plot 2D functions. Calculator-like button input makes it easy to enter expressions from the touch screen.

Shareware, $14.95 Online registration available at
www.swforce.com/register
Use with: Ps/PC
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Developer: SWForCE
Web: www.swforce.com/

Communications

MailSorter

Automatically sorts all incoming e-mail messages and places them into appropriate folders. Epiphan MailSorter 1.0 is a "plug-in" for Windows CE Inbox that helps you keep your e-mails in order.

Price: $24.95
Download demo at DigitalRiver www.digitalriver.com or developer's Web site
Developer: Epiphan Consulting
Phone: 613-749-9111 (Canada) or 888-486-6666
E-mail: info@epiphan.com
Web: www.epiphan.com/

PowerTerm CE

Enables Handheld PC users to connect to applications running on a variety of UNIX, DEC and IBM hosts, combining the full functionality of PowerTerm Interconnect with the mobility and flexibility afforded by Window CE devices.

Price: N/A
Use with: H/PC
Contact: Ericom Software, Inc.
Phone: 888-769-7876 or 201-525-5511
Fax: 201-525 5499
Email: info@ericom.com
Web: www.ericom.com

SoftGSM

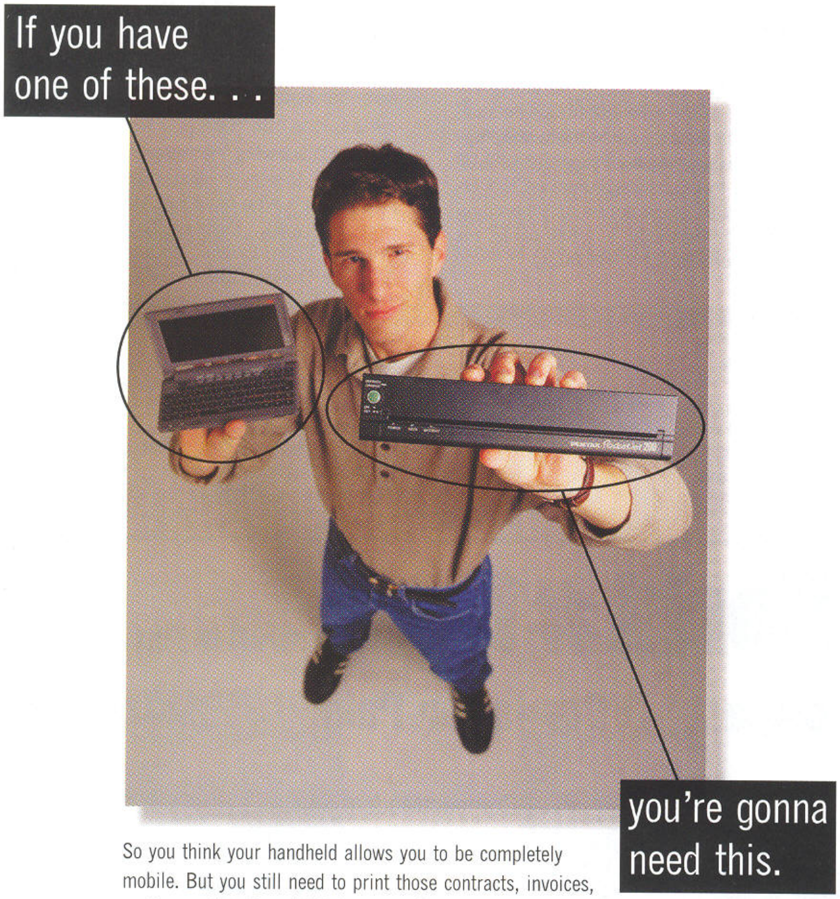
A "soft modem" communications program which lets an H/PC user communicate directly with a GSM phone via the serial port. SoftGSM for Windows CE was announced in late March of 1999. It will support communication between Windows CE 2.0 or greater H/PCs and the following mobile phones: Ericsson 388, 6xx, 7xx, 8xx; Nokia 5110, 6110, 6150; Siemens S10 phones. Cable to the individual phone is delivered with the product.

Price: na
Use with: H/PC
Contact: Micro Systemation
Phone: +46 8 739 02 70; Fax: +46 8 730 01 70
E-mail: info@softgsm.com
Web: www.softgsm.com

Teemtalk for Windows CE

Advanced terminal emulation for MS Windows CE devices provide a solution for thin client or Palmtop-to-host connectivity.

Price: N/A
Use with: H/PC
Contact: Pericom Software Inc.
Phone: 609-588 5300; Fax: 609-588 8906
Web: www.pericom-software.com



So you think your handheld allows you to be completely mobile. But you still need to print those contracts, invoices, quotes, or directions. With the Pentax® **PocketJet® 200** you can print directly from your handheld PC and add only one pound to your load! This full-page printer produces crisp text and graphics at speeds up to three pages per minute. And for complete wireless printing, an infrared option is available.

You need a printer-
make it PocketJet 200.

PENTAX®
TECHNOLOGIES

PocketJet® 200
The Ultimate Mobile Printer for Handheld PCs
For information on purchasing this product, please go to www.mobileplanet.com
Resellers interested in finding out more information can contact mobility@pinacor.com

Contact Managers

Maximizer for Palm-size PCs 5.0

Includes all the key features of Maximizer for Handheld PCs. Redesigned interface for the smaller Palm-size PC screen. Fully pen-based interface. Synchronization support for Maximizer (3.0is, 97, and 5.0), and Maximizer Enterprise (4.0 and 5.0). Many customization options. Address Book entries are shared with Pocket Outlook and other Windows CE programs, and appointments and tasks can be synchronized between them with the included Pocket MaxPort utility.

Price: $69
Use with: Ps/PC
Download demo at Developer Web site.
Developer: Multiactive Software Inc
Phone: 888-577-7809; Fax: 604-601-8188
E-mail: sales@maximizer.com
Web: www.maximizer.com

Mobile Reminders

Uses entries in your Auto PC's Address Book to remind you of special occasions. Mobile Reminders will remind you of the special occasion on that day or you may even set Mobile Reminders to remind you ahead of time.

Price: N/A (available Q2,99)
Use with: Auto PC
Developer: Mobile Visions Software
E-mail: info@mobilevisionssoftware.com
Web: www.mobilevisionssoftware.com

Database

Data Bridge

Data Bridge converts any database created on a Windows CE device to a tab-delimited text file, and vice-versa. This lets you exchange data easily between your PC Companion and Excel, Access, or any other database file.

Price: $5.00
Use with: H/PC & Ps/PC (CE 2.0 & above)
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Developer: ITIL
Web: www.itil.com/software.htm

Obase

An easy-to-use database program for PC Companions. Registered version of this shareware program includes a Desktop Designer, Scripting language, Multiple table support, and Color support. Obase works on Palm-size PC and Handheld PC, and comes with an automatic forms creator, automatic listview, configurable fields, combos, radios, checkboxes, graphics, buttons, automatic field formatting buttons with predefined actions, and automatic default values. Read only fields now supported, and the program sports an improved UI on Handheld/PCs, an import/export function. Obase stores all data in a single file and includes a help feature.

Shareware registration fee
Standard Version: $49
Developer Version: $69
Download at developer's Web site
Use with: H/PC, Ps/PC
Developer: Obsolution
E-mail: rboesch@obsolution.com
Web: www.obsolution.com

Oracle Lite for Windows CE (beta)

Oracle Corporation is now beta-testing the Windows CE version of its popular database program in preparation for a late summer release of Oracle Lite for Windows CE. Oracle Lite is a small, single-user, database program of interest to H/PC users requiring seamless synchronization with central database servers as well as individual H/PC users needing a small, stand-alone database program.

Price: N/A
Contact: Oracle Corporation
Phone: 650-506-7000
Oracle Web: www.oracle.com/
Oracle Lite Web: www.oracle.com/clientdb/olite/

Pervasive Mobile and Embedded Database (beta)

Pervasive offers three database engines sized to meet the specific demands of class of applications: a sub-8K engine designed for use in multi-application smart card environments, a sub-100K engine featuring flash in-memory and file data storage for applications built on RTOS, Windows CE and Palm OS platforms; a sub-350K data storage engine for Windows CE deployments. The initial beta will ship on the WinCE and VX Works platforms.

Price: N/A
Download beta for Windows CE and VX Works at: www.pervasive.com/developerzone/.
Contact: Pervasive Software
Phone: 800- 287-4383 or (512) 231-6000
Email: info@pervasive.com
Web: www.pervasive.com

Developer

Nettech's middleware

Nettech offers wireless development tools to support two-way interactive paging devices from Research In Motion Limited. Developers can now use Nettech's software products to extend their applications to run over RIM's two-way pagers. Nettech's middleware allows developers to add interactive paging support to existing applications or develop pager specific applications. Using Nettech's middleware, developers can deploy these applications over any wireless network providing interactive paging service.

Price: Call
Use with: H/PC, Ps/PC and H/PC Pro
Contact: Nettech Systems
Phone: 609-734-0300; Fax: 609-734-0346
Web: www.NettechRF.com

WinDriver CE

WinDriver CE simplifies Windows CE device driver development by freeing the developer from the need to master the CE Kernel. The WinDriver Wizard enables the developer to diagnose the hardware, and automatically generates code for the CE platform, which can then be tested on a PC with a Windows CE emulator and then executed on the CE device itself.

Price: $1999 WinDriver CE
Price: $999 WinDriver Linux
Contact: UniPress Software or KRFTech
Phone: 800-22-0550 or 732-287-2100

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$25 Gift Certificate Valid on any **online purchase** over $250.00. Gift Certificate expires August 31st, 1999. Only one gift certificate per address. Gift Certificate cannot be redeemed for cash or combined with any other offer. **Phone Hours: 9:00am - 6:00pm (Monday-Friday)**. All products are brand new, factory fresh with full USA warranties. All palmtop products include a 14 day money-back guarantee (less a 15% restocking fee) and a free 30-day defective exchange for same item. **Address:** 3613 Lafayette Road - Portsmouth, N.H. 03801 - (603)430-9394

Fax: 732-287-4929
Email: info@unipress.com
Web: www.unipress.com/windriver
Web: www.krftech.com/windrv

Finance

Cashman

Tracks all financial transactions including checking, ATM, savings, credit cards, and investments. Includes Budgets and Reports features. Note: Some handhelds need the MFC file to run this application.

Shareware registration fee: $39.95
Use with: H/PC (CE 2.0 +)
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Developer: Handheld Data Systems
Email: support@handhelddata.com
Web: www.handhelddata.com/productinfo.htm

CodeWallet™

Manage your important personal, financial, and business information with CodeWallet. Securely and conveniently store information for instant access anywhere, at anytime! CodeWallet allows you to create your own informational DataCards from over 30 different DataCard templates. Lock any or all DataCards with your own password. Secure 56-bit encryption keeps your data safe. DataCard finder makes locating information simple and fast. Credit/Charge and Calling Card forms that let you create and import your own images! (samples included) Exports all of your information to a text file.

Price: $29.95 USD Limited time offer! Only $19.95
Use with: Ps/PC
Download demo at the developer's Web site.
Developer: Developer One
Phone: 414-423-7276; Fax: 414-423-7065
E-mail: sales@developerone.com
Web: www.developerone.com/

Pocket Administrator

Lets you manage personal and business-critical information from your PC Companion. Using intuitive user-friendly Program Tabs, Pocket Administrator lets you access financial information, including portfolio tracking; access important personal account information; track banking, debit, credit card transactions, account balances and even organize bill payments as they occur; track business expenses as they occur; track efforts and time for client billing purposes; organize travel and other activities; manage business plans, personal goals and professional aspirations. You can view reports and lists of all stored data and transactions with a single screen tap. Pocket Administrator integrates with Pocket Contacts, and can be backed up to, and restored from your desktop PC. A series of 22 Microsoft ACCESS Reports are available to registered users and can be downloaded at www.handheldsolutions.com.

Price: $49.95
Use with: H/PC (CE 2.0+)
Download demo at developer Web site
Developer: Handheld Solutions Inc.
Web: www.handheldsolutions.com

Stock Manager

Track and manage stocks, options or mutual funds. A useful trading or investment tool that lets you calculate how much you need to buy stocks, follow and assess purchases and sales transactions. Helps you track how much you paid for a share and calculate profit if you sell at a certain price.

Price: $19.95
Use with: H/PC and Ps/PC
Download at developer's Web site.
Developer: Boma Software
Phone: 650-949-0767; Fax: 508-267-6123
E-mail: info@bomasoft.com
Web: www.bomasoft.com

Games/Entertainment

Crossword Puzzles for Windows CE

Provides puzzle lovers with countless hours of challenging crossword fun on the Handheld PC.

Price: $19.99
Use with: H/PC (640x240 or 480x240 screen size)
Developer: Quantum Axcess
Publisher: The Wizard Works Group, Inc.
Phone (Ordering only): 1-800-229-2714
Web: www.wizworks.com/wince.htm

Dominoes for Windows CE

Classic game of Dominoes for any PC Companion, including the new Auto PC.

Price: $10
Use with: H/PC, Ps/PC, H/PC Pro, and Auto PC (CE 2.0 +)
Purchase A/PC version online at Omega One's Web site
Purchase H/PC & Ps/PC versions at www.ceshopper.com
Developer: OmegaOne
E-mail: info@omegaone.com
Web: www.omegaone.com

EZOS FunPack 1.02

A package of diverting applications, including the following: EzCrash – a car game for mad drivers; EzJezzBall – try to cover the screen avoiding moving balls; EzMind – brain stormer based upon two different games; EzSokoban – block pushing game; EzTwinPeek – train your memory; MarbleSolitaire – familiar solitaire game played on a board with marbles; PipeGame – a type jigsaw puzzle made out of pipe (also available for Ps/PC).

Price: $49
Individual games also available
Use with: H/PC (CE 2.0+)
Download demos of individual games at Developer's Web site.
Developer: Ezos Ltd.
Phone: 604-944-8558; Fax: +32 2 387 20 10
E-mail: software@ezos.com
Web: www.ezos.com

Fortitude

A version of solitaire that combines the best parts of Patience and Freecell. Includes points and multiple levels.

Price: $15.00
Use with: H/PC (CE 2.0 +)
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Developer: Thieves and Kings
Phone: 800-704-7277
Web: www.thievesandkings.com/

FunPack2

A collection of three classic games designed especially for color-screen H/PCs and using a special sound engine to mix background music

Windows® CE
Pilot, Geos, Newton & Zaurus
✓ Custom Development
✓ Messaging Applications
Virtual Courier™ – cc:Mail
MS-Mail/Exchange connection.
Exchange forms & Lotus Notes
✓ International Porting
MicroBurst, Inc.
15732 CRABBS BRANCH WAY, SUITE 200
ROCKVILLE, MD 20855
PHONE (301) 330-2995
FAX (301) 330-8609
E-MAIL: markf@mburst.com
WEB: www.mburst.com

with game sounds to provide an exciting arcade experience. The package includes the following games: HCrossFire – move across the grid while trying to kill all the enemies. Collect stars for bonus points and more bullets as your ammunition becomes depleted; UncleJim – shoot at the tin cans while trying to miss the birds. Play against yourself or a friend on the same machine; CE Bomber – drop bombs which explode to destroy the enemies and the brick walls.

Price: $24
Use with: H/PC (color-screen, CE 2.0 only, not H/PC Pro).
Developer: Surerange Analysis
Fax: +44 (0) 1483 304960
E-mail: info@surerange.com
Web: www.surerange.com

Slingo

A combination of Slots and Bingo, Slingo comes with five game variations, Classic, Giant, Mixed Matrix, Super Squares and Duel Slingo. "Pull" the handle and spin the reels. Match card and reel numbers for points and collect free spins. Fill a row across, down or diagonally to make a "Slingo"! and "go wild" over Jokers. Spin to win, but watch out for the Devil!

Price: $29.95
Use with: H/PC & Ps/PC
Contact: Hasbro Interactive
Web: www.hasbrointeractive.com

Trivial Pursuit

The world's favorite trivia game comes with over 4000 questions and answers, thousands of film clips, images, sound clips, and much more! Play the familiar classic board version and the fast-paced version with rapid fire questions! See if you have what it takes to be a trivia master!

Price: $29.95
Use with: H/PC & Ps/PC
Contact: Hasbro Interactive
Web: www.hasbrointeractive.com

Monopoly

Take the world's most popular property trading game anywhere you go and experience the thrill of owning it all. Up to four players can choose their favorite classic token and challenge any of the 10 computer opponents, each with their own playing style. 18 different game rule variations.

Price: $29.95
Use with: H/PC & Ps/PC
Contact: Hasbro Interactive
Web: www.hasbrointeractive.com

Scrabble

Play Scrabble anytime, anywhere! Choose your tiles, shuffle your letters and play the ultimate word game against Maven, the computer champion in solo play or against up to four people in multi-player mode. Includes Scrabble dictionary

ce: $29.95
se with: H/PC & Ps/PC
Contact: Hasbro Interactive
Web: www.hasbrointeractive.com

LineUp

A simple, addictive board game in which you score points by aligning five or more balls of the same color horizontally, vertically, or diagonally.

Price: $12.95
Use with: H/PC & Ps/PC (CE 2.0+, including ARM cpu)
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Developer: Moose Software
Web: www.moosesoftware.com/

MIDPlay

Lets you play MIDI files from a PC Companion, through its serial port to an external MIDI device that accepts serial MIDI data from PCs. You'll need to find an adapter for the serial cable (more details at developer's Web site).

Freeware
Use with: H/PC or Ps/PC (all processors)
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Developer: Windows CE Conservatory
E-mail: cheekeat@iname.com
Web: web.singnet.com.sg/~cheekeat/wince/

Mobile Visions Trivia (Auto PC)

A trivia game that uses an open-ended structure so developers can build their own Trivia Database add-ons. Based on popular trivia games like Jeopardy, Mobile Trivia allows multiple players to take part in the fun using 100% speech recognition, making it safer to play while driving. Because it uses all speaker-independent words, it can be played by everyone in the car!

Price: N/A (available Q3, 99)
Use with: Auto PC
Developer: Mobile Visions Software
E-mail: info@mobilevisionssoftware.com
Web: www.mobilevisionssoftware.com

PalmPal

Adds a virtual pet to your Palm-size PC. Requires PocketC run-time module installed on Palm-size PC (available at OrbWorks, www.orbworks.com/)

Freeware
Use with: Ps/PC
Download at Tucows CE Monster: www.cemonster.com

SolitairePack

A collection of 16 solitaire card games for Windows CE, including: EastHaven, Forty Thieves, Indian, Square, Canfield, Auld Lang Syne, Blondes and Brunettes, Aces Up, Baker's Dozen, Black Hole, Eagle Wing, Fortune's Favor, FreeCell, Klondike, Rouge et Noir, Alternate.

Palm SolitairePack

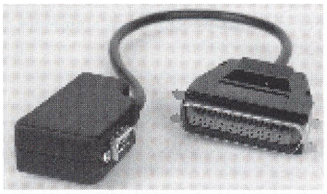
A special version written especially for the Palm-size PC. It includes the following 12 popular games: Aces Up, Alternate, Auld Lang Syne, Baker's Dozen, Canfield, Eagle Wing, East Haven, Free Cell, Indian, Klondike, Rouge et Noir, Square.

Price: $32
Use with: H/PC or Ps/PC (CE 1.0 & 2.0, not H/PC Pro)
Developer: Surerange Analysis
Fax: +44 (0) 1483 304960
E-mail: info@surerange.com
Web: www.surerange.com

SolPack & SolPack2

SolPack includes seven solitaire games: Auld Lang Syne, Black Hole, Double or Quits, Golf, Quadrille, Robert, and Treasure Trove.

SolPack2 includes six solitaire games: Five Piles, Fourteen Out, Nestor, Thirteens, Triangle, and Vertical.



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Tele: 44 181 302 4931 Fax: 44 181 302 4933
or via our Website Enquiry Form.

VISIT OUR WEBSITE AT http://www.greenwichinst.com

Shareware registration fee, each: $15
Use with: H/PC (CE 2.0+, Mips, SH3)
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Developer: Tracker Software
E-mail: MsKrypton@MSN.com
Web: www.puzzlexpress.com/Index.htm

XAudio MP3 Player

Adds a fully-functional Windows CE MP3 music file player to your PC Companion.

Price: $19.95
Use with: H/PC & Ps/PC (CE 2.0, including ARM)
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Developer: MpegTV/Xaudio
E-mail: info@xaudio.com
Web: www.xaudio.com/wince/

xWord CE

A crossword puzzle program that allows you to work puzzles wherever you are. There are 30 puzzles included with the program, and Puzzle Pak add-ons. Old Puzzle Paks can be removed from your system once you have completed them. You can load Puzzle Paks onto your storage cards for space savings.

Price: $15
Puzzle Packs free
Use with: H/PC (CE 2.0+)
Download demo/puzzle packs at Developer Web site
Developer: Emerald Technology Inc.
Phone (orders only): 800-427-2770
Email: Support@EmeraldTechnologyInc.com
Web: www.EmeraldTechnologyInc.com

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Entertainment for Windows CE Pack
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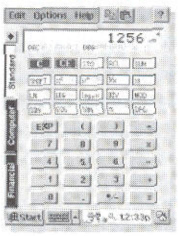

for Windows CE

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Graphics/Imaging

PocketDraw

A full-featured application for creating business drawings on all Windows CE platforms. PocketDraw includes a collection of palettes that help speed common drawing tasks.

Price: N/A
Use with: P/PC (CE 2.0+)
Developer: Systemix Software, Inc.
Phone: 877-978-3649 or 410-290-8813
Fax: 410-290-8810
E-mail: info@systemix.com
Web: www.systemix.com

Pocket PowerPoint Editor

Lets you create your own Pocket Powerpoint presentations, or edit existing ones on the H/PC.

Shareware registration fee: $23.95
Use with: H/PC (CE 2.0 +, all processors)
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Developer: MinhoSoft
E-mail: MinhoSoft@hotmail.com
Web: www.geocities.com/SiliconValley/Code/4543/index.html

Handwriting Recognition

PenReader

A handwriting recognition utility that recognizes English, Russian and the Extended Latin character set, which is widely used in many European languages, such as German, French, Spain, Czech, Polish, Dutch, Scandinavian and others. PenReader supports 27 European languages.

Price: $19.95
Use with: H/PC and Ps/PC
Download demo at Tucows CE Monster:
www.cemonster.com
Developer contact: Paragon Software
Phone and fax: +7 (095) 408-76-77 (Russia)
E-mail: msupport@penreader.com
Web: www.penreader.com

Healthcare

DoseAssist

Software tool designed to aid the professional clinician in making dosing decisions. Based on Simkin's drug therapy and dosing software, DoseAssist comes standard with Renal Dosing and Once-Daily Aminoglycoside Dosing modules. Optional dosing modules include Heparin Weight-Based Dosing and Antibiotic Kinetic Dosing. New modules will continually be developed based on market demand.

Software only - $425
Heparin Weight-Based Dosing Module - $69.95
Kinetics Dosing Module - $150
DoseAssist preloaded on a Handheld PC is also available - Prices Vary
Contact: Simkin
Phone: 352-332-5000 or 800-482-3981
Fax: 352-332-0099
E-mail: Sales@SimkinRx.com

Information Manager

Bills and Reminders

Helps you track bill payments, due dates and other important things. Palm-size PC as well as H/PC versions now available.

Price: $19.95
Use with: H/PC & Ps/PC (CE 2.0+)
Download demo at developer's Website
Developer: Boma Software
Phone: 650- 949-0767; Fax: 508-267-6123
E-mail: sales@bomasoft.com
Web: www.bomasoft.com

Notepad for Windows CE

MFC-based clone of Notepad from Windows NT. Supports Unicode and ASCII - compatible with Pocket C. No printing or font selection support. These features may be added as MFC includes support for them on the Windows® CE operating system.

Freeware
Use with: H/PC (CE 2.0+) ARM processor supported
Download at developer Web site
Developer: Starlight Computer Company
E-mail: scw@gamewood.net
Web: www.gamewood.net/scw/

Nuance

Alternative editor for Windows CE 2.0 H/PCs and 2.11 H/PC Pros, designed "with the intent of maximizing functionality, given the differences in interface between WinCE and Win9x/NT."

Freeware
Use with: H/PC & Ps/PC (CE 2.0+, all processors)
Download at Tucows CE Monster: www.cemonster.com

Outliner

A hierarchical organizer that lets you organize things in outlines and lists. Attach notes to each item in a list, export in Pocket Word format, import text files, and beam Outlines to and from other PC Companions. Includes check lists and easy drag and drop arrangement.

Free beta
Use with: H/PC & Ps/PC (CE 2.0 & above)
Download at www.cemonster.com or developer's Web site
Developer: Footprint Software
Web: www.econsult.de/footprint/Outliner/index.htm

Recordian (formerly Automate)

Track your project, car, health, home, perks and other records. Easily record your info, and have i with you right when you need it.

Price: $24.95
Use with: H/PC, Ps/PC (CE 2.0+) & desktop PC
Contact: Ilium Software
Phone: 888-632-5388 or 734-973-9388
Fax: 734-973-2640

E-mail: info@iliumsoft.com
Web: www.iliumsoft.com

Serial Numbers

A simple information manager for maintaining the serial numbers of software, devices and other things.

Shareware registration fee: $9
Use with: H/PC & Ps/PC (CE 2.0+)
Download at developer's Web site
Developer: Softwarebuero Mueller
Phone: +49 (371) 363079 (Germany)
Fax: +49 (371) 363081
E-mail: info@sbm.nu
Web: www.sbm.nu/

TapeMinder

Organize your videotapes, movies and programs with TapeMinder. TapeMinder shows your tapes and their contents, in a list or graphical view. See programs by tape, program title, category, status, and more. TapeMinder includes tools that let you find empty tape space of any size, find a program in your library, see your VCR's timer or counter settings, and get reminded when you need to tape a program.

Price: $24.95 (single platform, H/PC, Ps/PC or desktop PC)
Price: $34.95 (any two platforms)
Price: $44.95 (all three platforms)
Use with: H/PC, Ps/PC or H/PC (CE 2.0 +)
Download demo at developer's Web site
Contact: Ilium Software
Phone: 888-632-5388 or 734-973-9388
Fax: 734-973-2640
E-mail: info@iliumsoft.com
Web: www.iliumsoft.com

Reference

Bible - King James Version

Read the King James Version Bible (KJV) and the New King James Version (NKJV) on your Windows CE Palm-size PC. This reader and database supports find, find next, smart verse lookup, next/previous verse, next/previous chapter, and next/previous book. The King James Version (KJV), the NKJV, a German, Spanish, French, Weymouth, Young's, ASV, and Darby are available.

Freeware
Use with: Ps/PC
Download at developer's Web site
Developer: Olive Tree
Web: www.OliveTree.com

HpcBible

Web-based application with the full version of the New Testament (more versions to come). It comes with a Read-me text file to help you fully utilize the application. It can be run on Win95/98 environment or in conjunction with any Web browser.

Price: $10 (version 2.1, American Standard)
Price: $15 (version 2.2, King James)
Use with: H/PC & Ps/PC (Ps/PC needs third-party Web browser)
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Web: meltingpot.fortunecity.com/dominica/40/hpcbible front.htm

HPC Translate

Translate single words from one language to another. Currently HPC Translate includes English and Spanish dictionaries. Each dictionary contains approximately 30,000 words. HPC Translate can be used to translate a selected word in almost any Windows CE application that uses standard edit control, such as Pocket Word, Ink Writer, HPC Notes and more.

Price: $19.95
Use with: H/PC, Ps/PC and H/PC Pro (CE 2.0+, including ARM)
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Developer contact: PhatWare Corp.
Fax: 650-299-1369
E-mail: sales@phatware.com
Web: www.phatware.com

WordBar for Windows CE

Adds a talking "wordbank" tool for use with Pocket Word. Primarily designed as an educational tool, it looks like it could be used to store commonly used words and short phrases. Pop-up WordBar, select the desired word an it is automatically entered into the document.

Price: 50 UK pounds
Use with: H/PC (CE 2.0+)
Developer: Crick Software
Phone: 01604 671691 (U.K.); Fax: 01604 671692
E-mail: info@cricksoft.com
Web: www.cricksoft.ocm

Specialized

CSI MobileLink

A field force automation solution that lets you use PC Companions, Windows 98/95/NT computers, and interactive voice response (IVR) technology for field data collection and transmission. CSI MobileLink lets manufacturers and retail merchandising companies create merchandising surveys and assign call schedules from a single Windows 98/95/NT application. Price, display information, stocking, and other important data is collected in the field using a PC Companion or Windows 98/95/NT computer, or through CSI MobileLink's integrated IVR system.

Price: N/A
Contact: CASIO Soft, Inc.
Phone: 408-441-2000; Fax: 408-441-4175
E-mail: mobilelink@casiosoft.com
Web: www.casiosoft.com/mobilelink/

EasyTrack Inspection System

Automates property inspections. EasyTrack is designed for use by property management firms, housing authorities, code enforcement agencies, realtors, appraisers, and other organizations. The product includes Windows CE handheld software as well as a Windows 95/98/NT desktop component. Using this system, organizations will eliminate paperwork, reduce the amount of time spent administering inspections, and standardize their entire inspection process.

Price: $na
Use with: H/PC (CE 2.0+) and other systems
Download demo at developer's Web site
Developer: PC Systems
Phone (570) 822-8920; Fax (570) 823-7998
E-mail: info@pcsystems-usa.com
Web: www.pcsystems-usa.com

PocketAdvantage

A set of applications that let sales reps or managers dial in (via RAS, via internet, via wireless, etc.) and update their H/PC with the latest product, customer and sales information. It uses this information to turn the H/PC into an order entry system that also reports sales.

Travel 120™ PCMCIA LS-120 SuperDisk™ Drive
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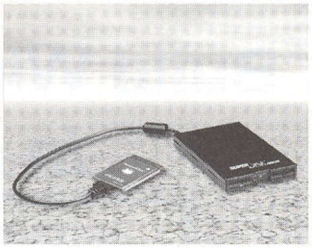
Now enjoy the benefits of the same drive as desktop and notebook users! Use it with standard 3.5" 720 Kb and 1.44 Mb diskettes. Or with 120 Mb SuperDisk diskette media. Eliminate the need for connectivity kits and a notebook or desktop PC, just to transfer files to another diskette or hard drive. Use it to download large files from the Internet, run large graphics presentations, transfer files between your H/PC and notebook or desktop computer, and even to run or load programs from a floppy. Save costly space on your compact flash and PC memory cards, or free up system memory on your H/PC. Carry it anywhere. It's small enough to fit in your jacket pocket!



Compatible with Windows CE 2.0, Windows 95 and 98, Windows NT, Windows 3.X and DOS - use it with all of your computers.

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Email: travel120@accurite.com

Price: varies
Use with: H/PC
Contact: Inventiv Software
Phone: 901-758-0123 x108
Web: www.inventiv.com

Sports

P.T. Golf

Keep your scores while you play on a Palm-size PC or notebook PC. When you're finished playing, simply upload the scores to your desktop computer and you're ready to analyze your game.

Price: $34.95
Use with: Ps/PC
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Developer: Prevalent Technologies, Inc.
Phone: 316-371-8816
Email: info@prevtech.com
Web: www.prevtech.com/

ScorePro

Lets you keep track of your golf score with your H/PC. ScorePro lets you play in three modes – score tracking, single game, or multiple games. It lets you edit scores, players and golf courses, and will recalculate all totals automatically and keep the grand total of bets if playing multiple games. ScorePro keeps a database of courses played. Lets you chose from eleven different types of games. Includes over 300 Trivia Questions!

Price: $39.95
Use with: H/PC (CE 2.0+)
Developer: Sandtrap Software
Web: www.scorepro.com

SwimPro

A swim timer and performance calculator for Windows CE. Features include multiple swim timers; configurable for any pool; hotkeys; automatic calculations for lap time and a lap counter. SwimPro does calculations for swimming speed, stroke rate, and stroke length. Calculations are always shown on the main screen for the most recently completed set of times, as well as the one previous to that, so that changes (as the swimmer is tiring) can be seen.

Price: $34.95
Use with: H/PC & Ps/PC (CE 2.0+)
Download demo at developer's Web site
Developer: Cambridge Computer Corporation
Sales: 800/462-4481 or 203/288-6004
Fax: 203/288-0009
Web: www.cam.com

Synchronize

All in Sync! Personal

Lets you synchronize your Windows CE-based PC companion with your desktop PC's Lotus Notes, mail, calendar, address books, to-do lists and events with you wherever you go. Once the application is installed and configured, it synchronizing automatically, each time you dock in your device. You can also dialup remotely from any location and synchronize.

Price: $49
Use with: H/PCs or Ps/PC (CE 2.0+)
Contact: River Run Software Group
Phone: 203-861-0090; Fax: 203-861-0096
E-mail: info@riverrun.com
Web: www.riverrun.com

Visual CE™
Visual Development Environment for Windows CE

Build Windows® CE forms
in minutes !!!

Free Windows CE sample software at **http://www.syware.com**

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CompanionLink

Supports synchronization between your PC Companion and Microsoft Outlook and Schedule+, ACT!, GoldMine, Lotus Organizer and more. It's easy to install and use. Free technical support included.

Price: $39.95
Use with: H/PC & Ps/PC (CE 2.0, all processors)
Download demo at Tucows CE Monster:
www.cemonster.com or developer's Web site
Developer: CompanionLink Software
Phone: 800-386-1623
E-mail: Sales@CompanionLink.Com
Web: www.companionlink.com/

SynCEnotes v0.95 beta

Lets you bring your Microsoft Outlook notes to your H/PC. Version 0.95 beta will run until the beginning of September 1999. After this date the synchronization will no longer work. Of course, you will still be able to access your data and export it.

Freeware beta
Use with: H/PC
Download at developer's Web site
Developer: Christian Weinberger
Web: home.munich.netsurf.de/Christian.Weinberger/syncenotes.html

Utilities

128-bit Security Upgrade

The 128-bit security add-on for Pocket Internet Explorer version 3.0 gives you the highest level of protection possible whenever you access a Web site that supports 128-bit security. This means that you can use credit cards or make other financial or confidential transactions over the Internet with the highest level of security available.

Freeware
Use with: H/PC
Download at Microsoft Web site
Web: www.microsoft.com/windowsce/products/download/128ssl.asp

AccessPanel™ Platinum Edition

Helps simplify and speed up text entry into Pocket Word, Excel, Outlook and other applications. AccessPanel lets you create "personal phrase formats" that allow you to define and customize phrases, note headings and more. It supports automatic insertion of the date, time, and timer information. Customized contact formats let you to create insertable text that includes selected contact information fields, date and time information and more! Phrase database import and export utilities allow you to archive your phrases or edit them outside of Access Panel. Dial your contacts with ease using the contact RapiDialer!

Price: $27.95
Use with: H/PC and Ps/PC (CE 2.0+)
Download demo at the developer's Web site.
Developer: Developer One
Phone: 414-423-7276; Fax: 414-423-7065
E-mail: sales@developerone.com
Web: www.developerone.com/

Active Volume (Auto PC)

Changes the volume of your Auto PC to compensate for road noise. Set the volume on your Auto PC to whatever volume you feel comfortable with, and Active Volume will alter it as you drive so that you can always hear it!

Price: $29.99
Use with: Auto PC
Developer: OmegaOne
E-mail: info@omegaone.com
Web: www.omegaone.com

AudiblePlayer

AudiblePlayer is a Windows CE software application which gives listeners the ability to download audio books, magazines, news and more from the Web and take them with them, on their Palm-size PC, anywhere they go for mobile listening. Programs are selected and purchased online from the 17,000 hours available at audible.com, downloaded to the desktop, and automatically transferred to the AudiblePlayer on the Palm-size PC for "lift and listen" functionality—anytime, anywhere!

Price: Free
Use with: Ps/PC
Contact: Audible Inc.
Phone: 1-888-283-5051
Email: customer_service@audible.com
Web: www.audible.com

CE File

File manager for the Palm-size PC.

Freeware beta
Download at developer's Web site
Developer: EpiCard
Email: dnload@epicard.com
Web: www.epicard.com/dnload.htm

CE-Star

Lets you display and input Chinese into your H/PC and H/PC Pro. Read and write Chinese messages in Inbox, view Chinese Web pages with Pocket Internet Explorer, create Chinese Word documents and more. Supports Simplified and Traditional Chinese fonts.

Shareware registration fee: $25.00
Use with: H/PC & H/PC Pro (including ARM processors; Ps/PC version soon)
Download at Tucows CE Monster: www.cemonster.com or developer's Web site
Developer: CE Star
Web: www.ce-star.com/

CoverMe!

Lets you quickly erase any of the many 'histories' that your H/PC and H/PC Pro keep track of. Use CoverMe! to get rid of any of the following: Run History, Recent Documents List, Favorites List, and Pocket Internet Explorer Address History.

Price: $13.00
Use with: H/PC & H/PC Pro (CE 2.0 & above)
Download demo at Tucows CE Monster: www.cemonster.com or developer's Web site
Developer: Grundle Software
Email: info@grundlesoftware.com
Web: www.grundlesoftware.com/

DState

Lets you find out how much free program and storage memory is left on your PC Companion as well as track the power left in your power source(s).

Freeware
Use with: H/PC & Ps/PC (CE 2.0 +)
Download demo at Tucows CE Monster: www.cemonster.com or developer's Web site
Developer Web: www.dcollections.com/dstate/index.htm

GPS Clock (Auto PC)

Set your Auto PC's clock by the atomic clocks used by the Global Position System using an Auto PC equipped with an optional GPS receiver.

Freeware
Use with: Auto PC
Developer: OmegaOne
E-mail: info@omegaone.com
Web: www.omegaone.com

Input Method PowerSuite

Four innovative input methods in one package to help you get more out of your Palm-size PC. Includes AccessPanel Platinum Edition, UniKey, RapidCalc, and NumeriPad.

Price: N/A
Use with: Ps/PC
Download demos of individual utilities at developer's Web site
Developer: Developer One
Phone: 414-423-7276; Fax: 414-423-7065
E-mail: sales@developerone.com
Web: www.developerone.com/

Language Extender

Provides "localization" of the Windows CE operating system and built-in applications to your native language and enables your native keyboard layouts.

Price: $49.95
Use with: H/PC (CE 2.0 & above)
Download demo at Tucows CE Monster: www.cemonster.com or developer's Web site
Developer contact: Paragon Software
Phone and Fax: +7 (095) 408-76-77 (Russia)
E-mail: msupport@penreader.com
Web: www.penreader.com

Speed Trap (Auto PC)

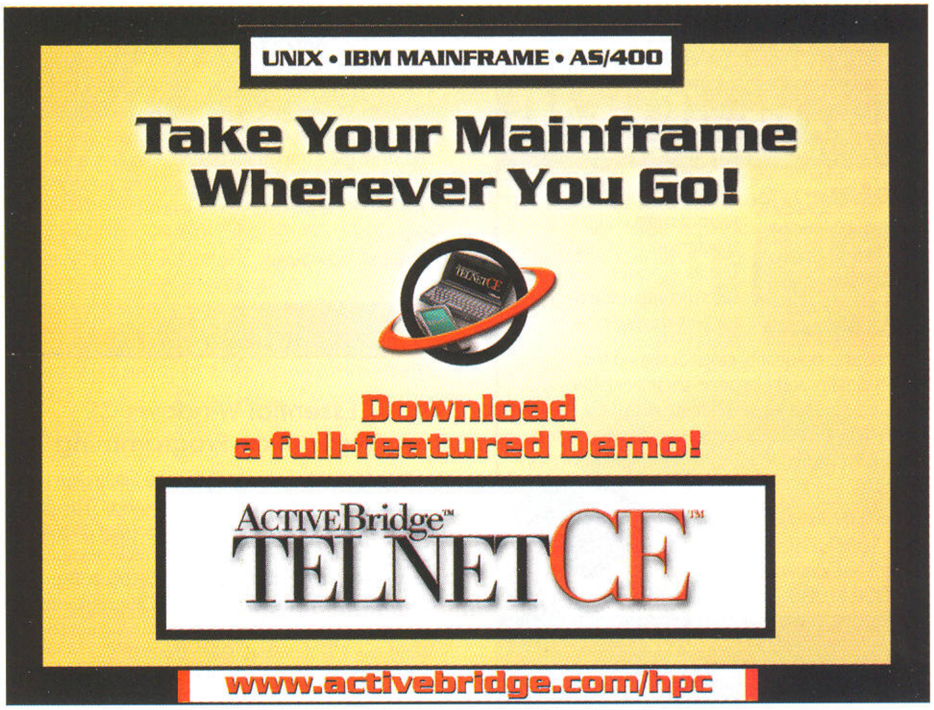
Works with an optional GPS and your Auto PC to warn you when you start to exceed a given speed limit.

Freeware
Use with: Auto PC
Developer: Mobile Visions Software
E-mail: info@mobilevisionssoftware.com
Web: www.mobilevisionssoftware.com

Startler

A full-featured clock utility for Windows CE Palm-size PCs. This program contains a travel alarm that includes twin alarms and a snooze button. Connect the Palm-size PC to its AC power source, run Startler and you have a large-digit bedside clock.

Shareware registration fee: $10.00
Use with: Ps/PC (CE 2.0 & above)
Download at Tucows CE Monster: www.cemonster.com or developer's Web site
Developer: Thumbs Up!
Phone: 800-546-5799; Fax: 619-296-8473
Email: info@thumbsupsoft.com
Web: www.thumbsupsoft.com/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Download a full-featured Demo!

ACTIVEBridge™ TELNETCE™

www.activebridge.com/hpc

TapRight

Lets H/PC & H/PC Pro users ALT-Tap without a keyboard. TapRight installs as an icon in the system tray, and acts like a sticky ALT key. You press TapRight then you can bring up context menus. With the new version, the ALT key can automatically be released if you want.

Freeware
Use with: H/PC and H/PC Pro
Web: www.moreinfo.com.au/peterepeat/

Services

Developer

ETS Windows CE Software Development

ETS specializes in the design, development, implementation, and support of mobile computing solutions, for both small and large enterprise wide projects.

Price: N/A
Contact: Extended Technology Systems
Phone: 760-729-3396; Fax: 760-729-3397
E-mail: info@exts.com
Web: www.exts.com

Incidents Software

WinNet Systems, Inc. develops custom software programs for Client/Server based applications, including Incidents Software for law enforcement services.

Price: N/A
Contact: WinNet Systems
Phone: 888-594-6638
E-mail: WinNet_Systems@msn.com
Web: www.winnetsys.com

EXTREME GEAR
for the active PDA

PalmSuit
Sleek black neoprene cases feature rugged zippers, storage pockets, and more! Use as slipcases, or attach to velcro-compatible neoprene for play-through use.

These are top-quality cases designed for functionality and elegance, their sleek lines and contemporary design offer visual appeal, while the rugged 3mm neoprene construction offers excellent protection for the handheld device on the go.

Palm Suit Dimensions:
5.5" X 3.75" X .8"
WinCE Suit Dimensions:
7.5" X 4" X 1.1"

WinCESuit

MarWare
visit us at http://www.marware.com
or email: sales@marware.com

GoAhead Software

GoAhead Software's embedded management applications enable OEMs to develop and market devices that are accessible via Web-browser, can remotely upgrade their own software via the Internet. GoAhead WebServer is a royalty-free, open-source, standards-based embedded Web server for integrating Web-based access into devices.

Price: varies by product
Contact: GoAhead Software
Phone: 425-453-1900; Fax: 425-637-1117
E-mail: info@goahead.com

Online

AvantGo.Com

This free Internet service lets you download Web content, from over 100 popular channels, optimized for display on your handheld. AvantGo.com is designed to provide connectivity both off-line and wirelessly in real-time to content and interactive applications. AvantGo.com is available for users of Windows CE-based Handheld and Palm-size PCs, and devices using the Palm OS. AvantGo.com software comes bundled with devices from Casio, IBM, and Philips Electronics.

Price: free
Contact: AvantGo
Phone: 650-638-3399.
Web: www.avantgo.com

CyberPOCKET.com

This is a new site with a well organized Software Download Section, a full-blown PDA Forum, a PDA Classifieds and a Sites to Visit section.

Web: www.cyberpocket.com/home.html

My Docs Online!

Free Web-based service for storing documents and files on the Internet. Users receive 20 MB of storage space for any type of file. Users can upload and store their important business and personal files and then access them from an H/PC or any Web-enabled PC anywhere in the world.

Price: free
Contact: My Docs Online!

Publications

Essential Windows CE Application Programming

A guide to the essential features and core techniques of Windows CE programming. This book concentrates on the unique aspects of Windows CE persistent storage, user interface design, and desktop connectivity. The author, Robert Burdick, has over two years of Windows CE programming experience and has been involved in a number of Windows CE development efforts.

Price: $49.99 (25% off at Amazon.com)
Publisher: John Wiley and Sons
Sales contact: www.amazon.com or author's Web site
Author: Robert Burdick
E-mail: rburdick@presarata.com
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On the Road with Ultra-Portable Printers

BY RICH HALL

The best advice I can give to mobile professionals about taking a portable printer along with them on a business trip is – avoid it! Any printer, no matter how small and functional, is another piece of hardware, with cables and batteries, to carry along with you. Ask yourself these questions:

1. Do I really need to print the document out on the trip, or can it wait until I get back?
2. Can I just send it as an e-mail, or an attachment to an e-mail? (E-mail it to the client, or e-mail it back to your office and have them print it out and send it.)
3. Will a fax do? (If your H/PC has a modem, you can use a program like bFAX (www.bsquare.com) to fax the document to a hotel or company fax machine.
4. Can I use someone else's printer? (Carry a serial-to-parallel adapter and your H/PC's connectivity cable and connect to a local printer.)

However, there are those who really need to print out documents on business trips. You may need to leave a service report with someone, or a document listing repairs made at some remote facility. You may want to print out a product or service description for a client. And there's nothing like printing out and signing a contract on the spot to make sure a sale doesn't mysteriously disappear. All these situations call for a portable printer, and when you're on the road, smaller is better.

Ultra-portable printers.

If you really need to take a small portable printer with you, there are a few that fit the bill. These are not the small desktop inkjet printers you see advertised everywhere, but "ultra-portable" printers, not much bigger than a Handheld PC. Here are a few that fit the bill, along with my experiences with each.

PocketJet 200 Printer

Pentax has been making small portable printers for some time now, and the PocketJet 200 is their latest. The PJ200 is a 200 dpi printer measuring 1.2 x 10 x 2.2 in (30 x 255 x 55 mm) and weighing 1.1 lb (497g) with battery and is compatible with all print-enabled Windows CE (2.0 and above) devices. PocketJet lets you print text and graphics at speeds up to three pages per minute. It prints on high-quality thermal paper. This means you won't be spending money on printer cartridges, but will be spending money on the special thermal paper. Pentax sells the thermal paper in packages of 100. The price is $8.95 for a package of letter-size, and $10.95 for a package of legal-sized sheets. Pentax recommends that you only use its paper. I don't know if standard thermal paper will work in the PocketJet.

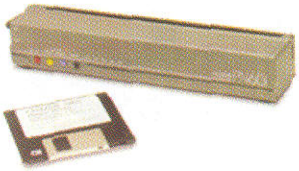
To use a PocketJet 200 with an H/PC you have to first install a software driver on the H/PC. The evaluation unit Pentax send did not have the Windows CE driver installation program (it was still in beta testing), but Pentax technical support sent it to me. The PocketJet 200 driver for Windows CE will be available on the Pentax Web page after testing is finished. Due to the PocketJet 200 driver still being in the pre-release stage the customer will have to send an e-mail to Pentax Technologies Technical Support to obtain this driver. Go to www.Pentaxtech.com/support/index.htm, click on "Send a message to Tech Support," and send your request for the Win CE PocketJet 200 driver. It will be e-mailed to you. I connected my NEC MobilePro 750C to my desktop PC and installed the driver. Pentax had also sent the optional Infrared Adapter for the PocketJet. I clipped the IR adapter on to the end of the printer (which extends its length by 1.5“). Then I lined up the MobilePro's infrared port with the PocketJet's, opened a Pocket Word document on the H/PC, and pressed Ctrl-P to print. The Print dialog box showed the PocketJet II as an option. I tapped "OK" and the PocketJet II Properites dialog appeared. I tapped "OK" once again and the document printed. Printing was very simple, and the thermal paper was surprisingly high in quality. It could be used for reports, business letters and the like. However, you can only print on the "smooth, coated side" of the paper and I found it difficult at times to determine which side that was. You can also connect this printer to an H/PC's serial port using a serial-to-parallel adapter. I would use this printer with the infrared adapter and forget the cable entirely.

PocketJet 200 ships with an AC adapter/charger, parallel to serial 5" cable, battery, carrying case, 100 sheet box of letter-size paper. The Infrared Adapter is optional and priced at $115. PocketJet 200 prints up to 40 pages on a single battery charge. Battery can be completely recharged in 70 minutes.

Price: $299.95

Sales contact: MobilePlanet; Phone: 800-MPLANET (675-2698); Web: www.mobileplanet.com Developer: Pentax Technologies; Phone: 800-543-6144 or 303-460-1600; Web: www.pentaxtech.com.

Citizen PN-60I IrDA Color Printer



This portable color printer comes with a built-in IrDA port that lets you print to it from your H/PC using infrared communications and no cables. The PN-60I measures 1.85 x 10 x 2 in (47 x 254 x 51 mm) and weighs 1.5 lb (680 g) with battery. It's more expensive than any printer here, but less expensive than the PocketJet 200 with optional Infrared Interface.

It's relatively easy to set up the printer (plug it in, slip a sheet of regular paper in the slot). It is important to note that Citizen PN-60I and PN-50 emulate Epson and IBM Proprinters – not the Hewlett-Packard PCL standard. This means that you cannot print from Windows CE 2.0 devices unless you install third-party printer software like bPRINT (www.bsquare.com) or JETCET PRINT (www.westtek.com). Free demo copies of both programs are available at the companies' Web sites. I installed a demo copy of JETCET on the NEC MobilePro, installed both Epson and Citizen printer drivers, opened up a Pocket Word document, lined up the infrared ports and pressed Ctrl-P. You have to go through a couple more dialog boxes, but the end result was a nice, 360 dpi print out of the document.

Citizen designed their ultra-portable printers to accept standard paper. This means that you can print out high-quality letters and reports on company letterhead. It also means that the printers use ink cartridges that are quite small. The good news is that the proprietary cartridges are relatively inexpensive ($9.95 for black, and $14.95 for a color ink cartridge). The not-so-good news is that they run out quickly. You'll only get a couple pages with the color and 10-15 with the black cartridge. Use this printer, especially with color cartridges, for important documents.

Tip: I had problems testing both of the printers with infrared interfaces. Neither worked until I disconnected the H/PC from my desktop PC. Apparently, the H/PC can't use its IrDA port while the serial port is in use.

You can also use a serial-to-parallel adapter to connect to the PN-60I's parallel port.

Options include serial-to-parallel adapter cable: $37.95; rechargeable NiCd battery: $79.95; auto power adapter: $69.95; Apple Mac interface cable: $39.95; international AC power adapter: $69.95; b/w printer cartridges $9.95; and a color ink cartridge: $14.95. The Citizen PN-60I is priced at $359.95.

Citizen also offers the slightly-smaller PN-50, which accepts black ink cartridges only. It comes with an AC power adapter and has an optional NiCd rechargeable battery available, which increases its weight to 1.4 lb. The PN-50 has a parallel-port interface only, which means that you need a serial-to-parallel port adapter to connect it to an H/PC. Options include a serial-to-parallel adapter: $49.95; a rechargeable NiCd battery: $39.95; a battery & charger combo pack: $79.95; and b/w printer cartridges $9.95. The Citizen PN-50 Portable Printer is priced at $169.

Both Citizen printers are available at MobilePlanet; Phone: 800-MPLANET (675-2698); Web: www.mplanet.com. The developer of the Citizen portable printers is Citizen America Corporation; Web: www.citizen-america.com

HP DeskJet 340/340CBi Portable Printers

Hewlett-Packard's DeskJet 340 and 340CBI are color inkjet printers. Both of the 340s measure 2.6 x 12.2 x 5.8 in (96 x 310 x 96 mm) and weight 4.3 lb (1.94 kg). The DeskJet 340 does not come with a battery, but can accept an optional NiCd battery pack. Its sister, the 340CBi, comes with the rechargeable NiCd battery and an infrared adapter. The 340 is a little longer, a little thicker, and about three times as wide and heavy as the Pentax and Citizen America printers. It's more a borderline ultra portable, but I mention it in this review because you carry it with you in your suitcase or car (probably not your briefcase). The DeskJet 340 I tested came with AC power adapter, black and color inkjet cartridges, an attachable portable sheet feeder, documentation and software. I did not test the 340 CBI model.

I did not have the optional IrDA adapter, so I connected the MobilePro 750C to the DeskJet 340 using the H/PC's connectivity cable. The 340 has a Centronics (parallel) printer port, so I needed to use a serial-to-parallel adapter to make the connection (the Link-A-Printer, $59, Greenwich Instruments, www.greenwichinst.com). The H/PC's serial (synchronization) cable connected to the serial-to-parallel adapter, which connected to the 340's printer port. The clip-on sheet feeder installed easily, as did the InkJet cartridge. The 340 supports HP's PCL printer language, available on all H/PCs. It printed smoothly, without a hitch. The color InkJet cartridge costs around $30 and will print 100-150 pages per cartridge. The black cartridge costs $25 and prints 500-600 pages. As with the Citizen printer, you can use your own paper, including letterhead, with the 340s. This is a bulkier mobile printing solution that you won't be carting into a client's office. But it's the most economical in continuing cost of operation. And you could easily use the 340 as your personal printer at home.

The DeskJet 340 retails for $269 and the DeskJet 340CBi for $299. I could not find the Infrared Adapter and the NiCAD rechargeable battery listed on HP's Online Store. These two come with the 340CBi. Contact your local HP retailer, the HP Shopping Village (online) at www.shopping.hp.com/ (search on "340"), or phone 888-774-6847.

Canon Bubble Jet 50

Lakeside Realty

I did not have a chance to test Cannon's ultra-portable Bubble Jet 50, but mention it because it has some nice features and is very popular with mobile professionals. The Bubble Jet 50 measures 1.9 x 11.9 x 4.4 i (48 x 300 x 111 mm), weighing 2.1 lb (9 g) with battery. It's a high-resolution (720 x 360 dpi) printer using Canon's "Bubble Jet" printing technology. The Bubble Jet 50

Printer Accessories

Here are some accessories that might come in handy for printing on the road.

bPRINT – $29.95

Adds printing features to PC Companions, including support for additional printers. Demo available at company Web site. Contact bSQUARE Corporation; Web: www.bsquare.com/

H/PC Print Connectivity Pack – $69.95

According to MobilePlanet, this contains everything you need to print documents from your Windows CE handheld. You get the bPRINT software and a portable serial-to-parallel port (self powered). Contact MobilePlanet, www.mobileplanet.com

JETCET PRINT Professional for Windows CE – $39.95

Adds color printing capability to the H/PC and supports a number of other printers, including those mentioned in this article. Demo available at company Web site. Contact WESTTEK; Web: www.westtek.com

Link-A-Printer – $59

Cable with serial/parallel converter connects Handheld PCs to printers, for use with programs like bPRINT. Contact: Greenwich Instruments USA; Web: www.greenwichinst.com

Pygmy H/PC Serial to Parallel Converter Cable — $49.95

A serial-to-parallel converter cable with high-speed built-in buffer to allow reliable communications. Contact: Pygmy; Web: www.pygmy.com

emulates Epson and IBM Proprinter modes, so you'll have to install third-party printer software (see comments in the Citizen review, above). It comes with a Lithium-Ion rechargeable battery that will print up to 100 pages on a charge. It prints 5.5 pages per minute with the black ink cartridge and 2 ppm in color, making it one of the faster printers mentioned in this article. It comes with a 30-page sheet feeder, and it looks like it could be used with your home computer, if you don't need high-quantity printing capability. Canon has an interesting option called IS-12 Color Image Scanner Cartridge, which turns the Bubble Jet 50 into color image scanner. However, there is no indication that there is Windows CE software that will support this. The Bubble Jet 50 comes with a built-in infrared interface that lets you print without a cable.

CompUSANet was selling the Canon Bubble Jet 50 for $350 and the Bubble Jet 80 for $300 when I checked in mid-May. I ould not find a price on the black or color rtridges. For more information, visit Canon's Web site, www.canon.com, and search on Bubble Jet. A list of Canon U.S. retailers is available at the Canon USA Web site. Go to www.usa.canon.com/ and use the Quick Finder to go to Color Bubble Jet Printers. Select the Bubble Jet 50 or 80 from the list and click the "buy it now!" button to get a list of Canon retailers.

Which one is for you?

It depends on how you intend to use the printer. Here are three scenarios.

Occasional printing, printer with you all the time.

If you occasionally print out a document on a trip, but need to carry the printer with you in a briefcase (to appointments and meetings) then the PocketJet 200 or the Citizen PN-50 or 60I are your best choices. If black print is fine and you don't need to use letterhead, the PocketJet 200 seems to make more sense. If you need to print out on standard paper, like your letterhead, go with the Citizen printers. If you need color, the PN 60I. The reason I put these printers in the "occasional printing" category is because the price of the PocketJet's paper and the PN 50 & 60I's printer cartridges can add up.

Frequent printing, printer close by.

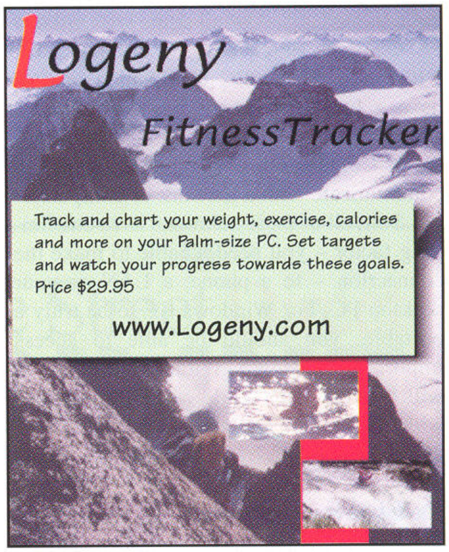
If you need to take a printer along with you, but can leave it in the car or in your hotel room, the DeskJet 340 or Bubble Jet 50 might make more sense. This is especially true if you need to do a lot of printing. Both use standard paper, accept color cartridges, and get a respectable number of printed pages per cartridge. Additionally, both can be used with your home computer.

Occasional printing, printer close by.

Any one of these printers could fit the bill for this scenario, but I'd still favor the DeskJet or Bubble Jet.

I haven't mentioned the Palm-size PCs in this article because I assumed that most mobile printing would be done from an H/PC's Pocket Word or Excel program. There is a version of bPRINT for the Palm-size PC, and all of the Ps/PCs come with infrared interfaces. It should be possible to print to these printers without any problem.

This review does not exhaust the portable printing possibilities. If the printer is small, can connect to the H/PC (serial port, serial-to-parallel adapter, or infrared interface) and can emulate PCL or some standard printer language like Epson or IBM Proprinter, you can probably use it with a H/PC. ■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Track and chart your weight, exercise, calories and more on your Palm-size PC. Set targets and watch your progress towards these goals. Price $29.95
www.Logeny.com

Cutting the Strings

Wireless Solutions for Windows CE

BY JASON PERLOW

A cellular phone is a wonderful thing to have especially when you're on the road. It's easy to use and it lets you stay connected to the rest of the world, wherever you are. Some of us probably couldn't exist without them. Too bad we don't have the same level of convenience with our PC Companions.

That's not to say you can't use a PC Companion to communicate with the rest of the world. All the necessary software is built into the Handheld or Palm-size PC (most Ps/PCs do not have a web browser). All of the newer Handheld PC Pros, and many other H/PCs and Palm-size PCs come with built-in modems. And all come with either a PC Card or CompactFlash Card slot (some with both). If the PC Companion doesn't have a built-in modem, you can add one using one of the card slots. You can even use PC or CompactFlash card LAN adapters to communicate with a network of computers.

Still, all of these solutions have one limiting factor – you need a cable to make the connection – to a phone, a LAN or your desktop PC. For Windows CE to be truly a portable, you should be able to access important information and communicate with the rest of the world wherever your are, without a cable. The only way to do this is with wireless data transmission.

The future is already here

Wireless solutions for Windows CE 2.0 devices are already here. Many use the Cellular Digital Packet Data standard (CDPD), which allows cellular telephone service providers to transmit data over existing cellular networks. In the United States, CDPD service is offered by major cellular carriers such as AT&T, Bell Atlantic, Ameritech, SNET and GTE, and is priced at approximately 50-70 dollars per month for unlimited access. Below are some of the wireless modems available for Windows CE devices, with some brief comments about them.

Sierra Wireless Aircard 300

Sierra Wireless (www.sierrawireless.com) offers a Type II PC Card wireless modem for use with H/PC and H/PC Pro machines. I tested this unit on an HP Jornada 820 with Bell Atlantic's wireless service and found it very easy to use. Installation requires loading a special software driver and configuring the modem through a small wizard-like program – it took about 5 minutes to install. Once configured, you simply access any Internet-enabled application (such as Pocket Internet Explorer or Pocket Outlook) and Windows CE communicates with it as if it was a modem device. All CDPD modems are limited to 19.2Kbps. I tested it with Pocket Outlook and Pocket Internet Explorer. I found that disabling graphics loading improves Web browsing performance a lot. In Outlook I saw less of a speed difference because POP3 e-mail transfers take up a lot less bandwidth. AvantGo has recently announced a free Internet service that lets PC Companions and Palm computers download Web content, from over 100 popular channels, optimized for display on the particular handheld device. I don't know whether it will improve downloading times. For more information, contact AvantGo, www.avantgo.com.

Novatel Wireless Contact

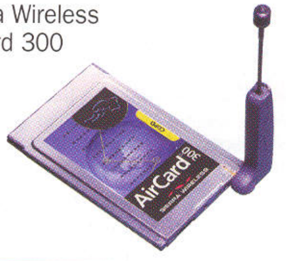
Novatel Wireless (www.novatelwireless.com) offers a Windows CE 2.0 H/PC based on Hewlett-Packard's 360LX, with a fully-integrated wireless CDPD built in. CDPD wireless service is available in most of the U.S. Contact ships with "Wireless Subscription Wizard" software preinstalled. This software makes it easier to find and subscribe to such a wireless CDPD service (see sidebar). No fussing about with drivers here, just simply unfold the built-in antenna, and you're up and running. If you already have an H/PC, Novatel sells Sage, a wireless CDPD modem that connects to your H/PC with a serial interface cable. (A complete review of the Contact is on page 15 of the Nov/Dec 98 issue. The review is also available at www.hpcmag.com, reviews section.) Novatel recently announced that it has formed an alliance with Casio Inc. to deliver a Cellular Digital Packet Data modem cradle attachment for the Cassiopeia Palm-size PCs.

[NOTE: Uniden has also announced that it will also provide a portable CDPD modem, the Data 2000, for its Palm-size PC.]

Motorola Personal Messenger 100D Modem

Motorola (www.mot.com), the cellular phone giant, offers its own wireless hardware and service combination with the

Sierra Wireless Aircard 300



Novatel Wireless Contact

Motorola Personal Messenger 100D Modem

Jason Perlow (perlow@hotmail.com.) is a handheld co puting enthusiast and t President of Argonaut Sy tems, a New Jersey-based systems integration firm.

Wireless Services

Another, perhaps easier, way to select the wireless communications devices for your Handheld PC, is to select the wireless service first. Most of the time they have access to the needed hardware and can sell or lease it to you. In some cases, they may give it to you as part of the monthly service fee. Below are some of the Wireless services available to Windows CE users in the U.S.

American Mobile Wireless Services

American Mobile/ARDIS provides two-way CDPD wireless data communications capabilities in over 10,700 cities in the United States. Handheld PC users can wirelessly send and receive messages using this service and a Motorola Personal Messenger 100D Modem (PC Card). Contact: American Mobile; Phone: 800-494-1732 or 847-478-4685; Fax 847-478-4700; Web: www.ammobile.com

AT&T Wireless

See "Paradigm4" below.

BellSouth Wireless Data

Provides wireless services throughout the USA. Mobile professionals using Microsoft Windows CE PC Companions can wirelessly synchronize calendars, to-do lists and address and phone books, retrieve information from their corporate LANs, send and receive Internet e-mail, and more. Uses the 3Com Megahertz AllPoints Wireless PC Card (www.3com.com/client/mcd/products /nj18000r.html). Contact: BellSouth Wireless Data; Phone: 800-726-3210; Web: www.bellsouthwd.com/sol/personal.html

ConectUS Wireless Service

ConectUS Wireless Communications offers wireless e-mail, fax, paging, and Internet service within the United States using ARDIS network. Contact: ConectUS Wireless Communications; Phone: 800-350-0373 or 805-497-0373; Fax: 805-494-3799; E-mail: orders@conectus.com; Web: www.conectus.com

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GTE Wireless

Provides wireless voice, data and paging services to consumers and businesses throughout the U.S. Major markets include Honolulu, San Diego, San Francisco, Seattle, Houston, Indianapolis, Cincinnati, Memphis, Nashville, Cleveland and Tampa. H/PCs equipped with a Socket PageCard (www.socket com.com) and the PageSoft Wireless Messaging System can receive wireless data anywhere within the coverage area. The PageCard must be purchased separately, and is available for $399, for individual purchases at MobilePlanet; Phone: 800-675-2638 / 818-888-9348; Fax: 818-888-3484; Web: www.mobileplanet.com

LocusOne Wireless Messaging/Voice Integration Services

The LocusOne service links e-mail, phone, fax, and pager to an H/PC, creating a unified messaging system. LocusOne works over the BellSouth Wireless Data network, which covers 92% of metropolitan areas in the USA. Contact: LocusOne Communications; Phone: 800-675-6287; E-mail: @locusone.net; Web: www.locus one.net

MobileWord

MobileWord provides a voice-based document creation service. Users (in North America) call a toll free number and "talkprocess" the document. The document is typed and placed in a "mailbox" on the MobileWord website. The customer uses the Handheld PC to retrieve the typed work via wireless modem or dial-up connection. Contact: MobileWord; Phone: 914-235-7500; E-mail: sales@mobileword.com; Web: www.mobileword.com

Paradigm4 ADCO Network

Paradigm4 provides a wireless network service in the USA at a flat rate, over ADCO (advanced data collection outsourcing) network. The connectivity pack, GlobeRunner H/PC, with radio modem provides wireless Internet/intranet access. Features of Paradigm4 are Internet access via wireless ISP, AT & T wireless service activation, unlimited usage for 6 months, 24-hour technical assistance via phone, and nationwide wireless service access (USA). Contact: Paradigm4; Phone: 973-808-9585; Web: wwwparadigm4.com.

Ricochet Network: Ricochet SX Modem/Wireless System

Ricochet is a packet radio network serving the greater San Francisco Bay area, Seattle, Washington, D.C. and several university and corporate campuses in the USA. Their new Ricochet SX wireless modem (price $379) is a thin external modem which can be velcroed to the bottom of an H/PC. Contact: Metricom; Phone: 408-399-8200 or 408-354-5038; E-mail: skohl@metricom.com; Web: www.ricochet.net

SkyTel Network: SkyTel Messenger

SkyTel offers wireless paging service primarily in the U.S., but expanding in to South America and the Pacific Rim countries. They also offer a line of pagers, including the SkyTel Messenger for Windows CE (price $150, lease options available), which can be linked with an H/PC to exchange messages with other SkyTel pagers and any Internet e-mail address. SkyTel Messenger software integrates into the H/PC Inbox communications application, and gives users direct access to pager and e-mail addresses stored in the H/PC Contacts. Contact: SkyTel; Phone: 800-395-5785; Web: www.sky tel.com ■

Personal Messenger 100D Modem, a PC card wireless modem for Windows CE 2.0 machines. But unlike the offerings from Sierra Wireless and Novatel, Motorola's wireless card only runs on Motorola's ARDIS CDPD network. While this sounds proprietary compared to other CDPD offerings, the ARDIS network is the largest wireless network in the world, and is offered in over 10,700 cities in the U.S. The Personal Messenger is available from American Mobile/ARDIS at 800-494-1732 (www.ammobile.com or www.ardis.com).

While CDPD modems greatly extend the communications capabilities of your H/PC, there is one major drawback from using conventional landlines – speed. Because CDPD was designed to overlay existing cellular networks, the max data rate you can expect from a CDPD modem is 19.2 Kbps, far less throughput than even a 28.8K analog modem. While POP3 e-mail communication via Pocket Outlook is speedy and acceptable, 19.2 Kbps is really too slow a data rate for acceptable Web browsing. If you really want to use Pocket Internet Explorer over a CDPD link, you'll want to disable graphics loading (located in Advanced properties in Pocket IE) in order to minimize the amount of network overhead.

Wireless LANs

Wireless LAN adapters let PC Companion users stay connected to the company network without a cable while they're in the office. Using broadband 2.4GHz spread-spectrum technology, you can connect to your own TCP/IP-based LAN at over 1 Megabit per second, rivaling the speed of ADSL or a T1. Of course, it doesn't qualify as "on the road" connectivity – you're limited to campus-size networks. But wireless LAN networks are a great way for companies to extend their LAN's to roving Windows CE devices, especially for applications like warehouse inventory management, trading floors, retail stock-keeping, and medical data entry and retrieval. For more on Windows CE Wireless LAN adapters, check out Proxim (www.proxim.com/windowsce); Wavelan (www.wavelan.com); Aironet (www.aironet.com); and Symbol Technologies (www.symbol.com). See also Chris De Herrera's review of the Proxim Wireless LAN card, page 26, May/June 1999 issue of *Handheld PC Magazine*.

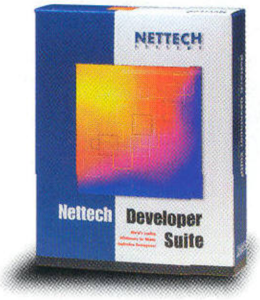
Future Developments

For Internet access, CDPD is only a stopgap technology – it's based on legacy cellular networks and wasn't engineered from the ground-up to carry data. On the horizon is CDMA, or Code Division Multiple Access, a digital cellular technology originally developed by Qualcomm and is now being embraced as the future digital wireless standard by many cellular carriers. The first generation of CDMA, CDMAone, is currently being used on the Sprint PCS network, although it is only being used to carry telephone conversations and text messaging on digital phones right now. CDMAone allows for data rates up to 14.4Kbps, however the next generation, CDMA2000, will allow possible data rates of up to 128Kbps, rivaling speeds of ISDN. Within a few months, Motorola will release a Windows CE adapter for their new Internet-ready i1000plus phone, which works on CDMA-derived iDEN digital wireless networks, such as Nextel.

When it's time for wireless development,

put in hours...

or ours.



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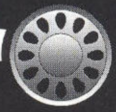
5 TIPS *for staying connected on the road*



BY CHRIS DE HERRERA

So you want to take your Windows CE PC Companion on the road and stay connected to the office or the Internet? Here's my list of five important things to do, or consider, before going on the road with a PC Companion.

1. Phone Cords

Bring an extra phone cord and an acoustic coupler. The phone cord lets you use your modem further away from the phone jack. I suggest getting a phone cord that automatically winds up to avoid the usual mess with twists. Some hotel phones do not have removable phone cords. An acoustic coupler lets you rest the handset of the phone in a cradle and connect your modem that way.

2. Mailstart

For fast access to any POP3 e-mail account from any desktop PC Web browser or H/PC Pro check out Mailstart (www.mailstart.com). Mailstart lets you read your e-mail and reply while on the road without retrieving it. You must know your e-mail address and password. If the system can not identify your mail server, you will be prompted to verify the settings. Once you are connected you can read, reply and delete e-mail. The best part is that the e-mail is available until you retrieve it on your desktop or via the Inbox.

3. Blind Dialing

Phones in countries around the world may have different sounding dial tones. Most PC Card and software modems recognize the standard tone used in the U.S. and some other countries, but not the other tones. If you have problems with dial tone recognition, here is a workaround. Place ATX3 (X3 for some software modems) in the "extra settings" section of your PC Companion's Dialup Networking utility. This causes your modem to dial without listening for a dial tone.

4. Power

When traveling with your PC Companions, don't forget to bring along your AC power adapter and extra batteries. I recommend bringing an extension cord so you have the flexibility to use your device throughout the room. Check out the power and plug standards if you're traveling abroad. Many PC Companion manufacturers include international AC Power adapters with their H/PCs and Ps/PCs, or offer them as optional accessories.

5. Backup

Backing up your data is even more important when you're on the road. BSquare's BUseful Backup Plus (www.bsquare.com) can be used to backup data to, and restore it from a SanDisk CompactFlash storage card (www.sandisk.com) in just a few minutes. Some of the newer H/PC Pro and Palm-size PCs have built-in backup utilities that offer similar capabilities. (I recommend that you check out the capabilities of these backup utilities before depending on them.) A regular routine of backing up your data is a must if you are constantly out on the road. If your PC Companion is lost or stolen, or if you need to pull the batteries for a complete reset, the backup will save you. To that end, after you back up your data, take the storage card out of the PC Companion and keep it in your wallet, or someplace safe.

Chris De Herrera is a special correspondent and contributing author for Handheld PC Magazine. He maintains one of the best Windows CE Web sites (www.cewindows.net). Chris is a Microsoft Comm Link columnist covering communications and Windows CE issues on Microsoft's Windows CE Web site. He is also a Microsoft Most Valuable Professional for Windows CE and writes articles on Windows CE for his own Web site and for other mobile computing publications. Chris regularly participates in chats on Microsoft Network and various newsgroups (including Microsoft.public.windowsce). You can e-mail chris at chris@cewindows.net.

Take a Good Book With You On Your PC Companion!

This great software lets you read books and listen to audio books on your H/PC or Palm-size PC. Check out the sources for commercial and copyright-free electronic books.

BY RICH HALL

Sometimes I get fed up with the word "productivity," especially when I'm traveling. After driving a couple of hours to catch a flight, sitting a few more hours in a coach airline seat designed for Mr. Skinny, spending the night in a hotel room (I NEVER get to sleep before 1:00 a.m. in a hotel room), and trudging around the exhibit floor of a computer show, the last thing I want to do is be productive. I want to relax a little, to unwind, have some fun.

To be completely honest, my first choice is not my PC Companion. If I'm in New York, I'll go catch a Broadway show. Chicago has a lot of excellent restaurants. And I imagine I could find something to do in London or Tokyo. But there are moments, waiting to board an aircraft, waiting for a taxi cab, or waiting (a long time) to go to sleep in a hotel room, when a little instant, mindless diversion is needed. And since I'm already carrying my PC Companion, why not have it do double duty.

Opening up a good book

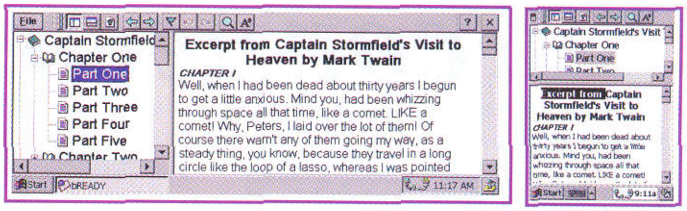
One of the things I always do before boarding a flight is go to the airport gift shop and look for a fat novel about airplane disasters. While you may not approve of my choice of novels, many of you bring along a favorite book to read in your spare moments. Did you know you can turn your PC Companion into an electronic book viewer?

bREADY lets you view books on your PC Companion

This nifty little application lets you collect and organize data from your desktop PC and then download it to a Handheld or Palm-size PC for easy reference. It sounds excessively productive, but fortunately you can use it to read just about anything you want. bREADY consists of the bREADY Publisher and bREADY Viewer. Publisher installs on your desktop PC and lets you create documents formatted for viewing on H/PCs or Palm-size PCs with the Viewer.

bSQUARE has versions of the Viewer for the Handheld PC, H/PC Pros, and Palm-size PC, and gives them away for free. You can download them from bSQUARE's Web site (www.bsquare.com/development/products/hpc/ready.htm). Once you've installed Viewer on your PC Companion, you can view any bREADY-formatted book document.

The main bREADY Viewer screen shows the organization of the book in the left of the display (Chapters, sub-sections or parts, the index, and bookmarks). Tap on the desired chapter and the text is displayed on the right of the screen (see Screen 1).



Captain Stormfield
Chapter One
Part One
Part Two
Part Three
Part Four
Part Five
Chapter Two

Excerpt from Captain Stormfield's Visit to Heaven by Mark Twain

CHAPTER I

Well, when I had been dead about thirty years I begun to get a little anxious. Mind you, had been whizzing through space all that time, like a comet. LIKE a comet! Why, Peters, I laid over the lot of them! Of course there warn't any of them going my way, as a steady thing, you know, because they travel in a long circle like the loop of a lasso, whereas I was pointed

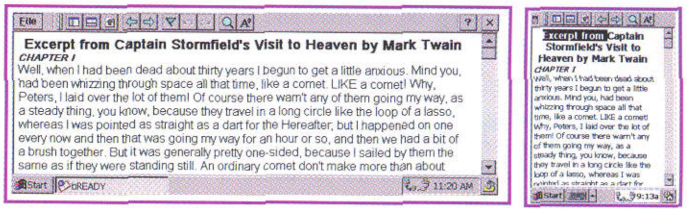
Captain Stormfield's Visit
Chapter One
Part One
Part Two

Excerpt from Captain Stormfield's Visit to Heaven by Mark Twain

CHAPTER I

Well, when I had been dead about thirty years I begun to get a little anxious. Mind you, had been whizzing through space all that time, like a comet. LIKE a comet!

Screen 1: The main bREADY Viewer screen, shown here on both the Handheld and Palm-size PC screens, displays the organization of the book in the left of the display (Chapters, sub-sections or parts, the index, and bookmarks). Tap on the desired chapter and the text is displayed on the right of the screen. Viewed here is Mark Tawin's Captain Stormfield's Visit to Heaven.



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Well, when I had been dead about thirty years I begun to get a little anxious. Mind you, had been whizzing through space all that time, like a comet. LIKE a comet! Why, Peters, I laid over the lot of them! Of course there warn't any of them going my way, as a steady thing, you know, because they travel in a long circle like the loop of a lasso, whereas I was pointed as straight as a dart for the Hereafter; but I happened on one every now and then that was going my way for an hour or so, and then we had a bit of a brush together. But it was generally pretty one-sided, because I sailed by them the same as if they were standing still. An ordinary comet don't make more than about

Excerpt from Captain Stormfield's Visit to Heaven by Mark Twain

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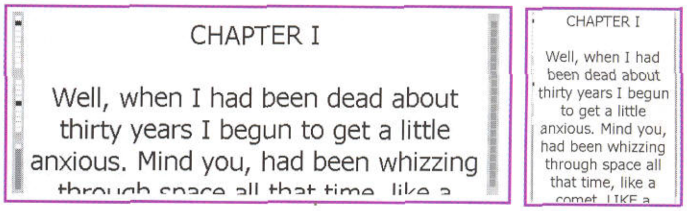
Screen 2: bREADY Viewer can display the book text in a full-screen view. You can also adjust the size of text.



CHAPTER I

Well, when I had been dead about thirty years I begun to get a little anxious. Mind you, had been whizzing through space all that time, like a

CHAPTER I

Well, when I had been dead about thirty years I begun to get a little anxious. Mind you, had been whizzing through space all that time, like a comet. LIKE a

Screen 3: bREADY Viewer's auto-scroll feature, displays a large-text, full-screen view of the book and automatically moves down the page as fast or as slow as you desire.

You can view the book in a full screen mode (Screen 2) and an auto-scrolling mode (Screen 3). Auto-scrolling displays large text on the full screen, and automatically scrolls down the page. You can set this feature to scroll as fast or as slow as you want, or you can use your H/PC's UpArrow and DownArrow keys to manually move up and down through the text in any of the views. Use the scroll buttons on your Ps/PC.

Using bREADY Viewer is relatively easy. The maximum font size of the text in the main viewer screen looks to be about 12 pts. I think they need to up that to 16 pts. Fortunately, the auto-scroll view displays the text in what looks to be about 24 pt – very easy to read.

Where to get bREADY books

There are a number of sources for electronic books formatted the bREADY Viewer. The Viewer comes with *The Hunting of the Snark* by Lewis Carroll, *Captain Stormfield's Visit to Heaven* by Mark Twain, and a few others. The bREADY Web ring lists four sites where you can download public-domain material formatted for the bREADY viewer. These include:

Geno's eBook Library
www.dahilig.com/PalmPC/bReady.htm

bSQUARE's samples
www.bsquare.com/development/products/bREADYBooks.htm

Electronic bREADY&trade
www.seanet.com/~fulcanelli/books.html

Electronic Text Library
www.nwlink.com/~smakofs/library.htm

Creating your own bREADY books

You can also use bREADY Publisher on your desktop PC to convert text in a format that can be read by the Viewer. That means that you can download any public-domain book in electronic format, (articles, news, reference material, etc.) from the Internet or a company intranet, convert it to Viewer format with table of contents and indexes, and transfer it to your PC Companion for mobile reading.

To test this feature, I downloaded a text file containing the classic hero-myth Beowulf, from the official Project Gutenberg Web site (http://promo.net/pg/list.html). Project Gutenberg is the largest source of public domain electronic texts available. Its "Etexts" are plain text files that can be viewed in any word processor, on any computer platform available. They can be easily converted to a format useable by the bREADY Viewer by bREADY Publisher.

I opened bREADY Publisher on my desktop PC, went to the File menu and selected "New" to create a new book. Then I went to the Tools menu and selected "Import Text File." The dialog screen that popped up let me browse my desktop PC's directories to find the desired text file. I found the Beowulf text file, clicked on the "Import" button and bREADY Publisher loaded the text file and divided it into chapters. bSQUARE says you can use Publisher to move chapters around and edit the book, but I left it as it was imported. Then, I went back to Tools menu and selected "Publish." I was given the option to save the book to a file, or send it directly to my PC Companion. I chose to send it directly to the Aero 2100 Palm-size PC I had connected to y desktop PC. It worked without a tch.The bREADY Viewer and a demo version of bREADY Publisher can be downloaded free of charge from the bSQUARE Web site at : www.bsquare.com/development/products/hpc/ready.htm.

bREADY Publisher is priced at $49.95 for a single-user copy. For more information, contact the bSQUARE Corporation; Phone: 888-820-4500; Web: www.bsquare.com.

Something a little more current than Beowulf

bREADY and Project Gutenberg help you with public domain books, but not current commercial titles. If you want to read (or listen to) Steven King or Steven Covey, you have to look elsewhere. There are two solutions:

The World Bookstore

Librius.com Inc. is starting this service for Windows CE and 3COM Palm users. They will make available free book-reader software (eBook) for the two platforms. You purchase and download the electronic book from their online store (www.librius.com). You can also download the free book-reader software from this site. According to Librius, eBook will let users select screen orientation and font size, read hypertext, display images, have international language support, and more. The software and the site were not ready when we went to press, so I have no feedback on this service, the selection or the cost of the books. For more information, contact Librius.com, Phone: 425-454 7557 (U.S.); E-mail: info@librius.com; Web: www.librius.com.

AudiblePlayer

AudiblePlayer lets you listen to audio versions of popular titles on your Palm-size PC. Programs are selected and purchased online from the 17,000 hours available at audible.com, downloaded to a desktop PC, and automatically transferred to the AudiblePlayer on the Palm-size PC. The AudiblePlayer is free and can be downloaded from the company Web site. For more information, contact Audible Inc.; Phone: 1-888-283-5051; E-mail: customer_service@audible.com; Web: www.audible.com. ■

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CORPORATE PROFILE

PC Companions Eliminate Paper and Save Money

PrimeSource Building Products uses LG Handheld PCs and Visual CE database software to make their merchandising team more effective.

BY JOHN M. PHILLIPS

Imagine three thousand pieces of paper being dropped on your desk every month. Now imagine one hundred tidbits of important information on every sheet of paper that must be read, tabulated, sorted and summarized by hand. Sound impossible? It was, at one time, for the PrimeSource Building Products merchandising team, but not any longer.

PrimeSource Building Products, a leader in the wholesale building products distribution industry, employs a fleet of merchandisers whose job is to regularly visit major retail chains within the industry and service the products that PrimeSource distributes. With each visit, a Service Call Report (SCR) is filled out that details the results of the store visit and concludes with the signature of an authorized store representative. Once a week, each PrimeSource merchandiser would mail his or her stack of SCR forms to the Corporate headquarters. One or two staff members would sort the hundreds of SCR forms, read through each and every report, retrieve a sample of random forms for analysis, then file the forms away. It has been an arduous process that has required an enormous amount of manpower and cost. Because of the volume of information, accurate assessment of the effectiveness of the merchandising fleet has been nearly impossible.

Selecting components for the SCR system

What PrimeSource has been looking for is a way to easily capture the SCR data at the point of service, including the authorized signature of the store representative, and transmit that data to headquarters where it could be used as real information. The emerging use and advances of Handheld Personal Computer (H/PC) technology seemed to be an ideal solution to alleviate the manual paper system deficiencies. For starters, the H/PC is able to capture electronic signatures using its touch screen technology. More than that, the H/PC is capable of data transmission by a modem with Dial-Up Networking (DUN). Last, the operating system of an H/PC, Windows CE, has a Graphical User Interface (GUI) front end that is easy to use and intuitive. These three components were required of any solution in order for the project to be a success.

While there are many software tools available within Windows CE and an H/PC, the one thing that was painfully missing (from the earlier Windows CE 2.0 Handheld PCs) was a database application, complete with GUI front end. Fortunately there are a number of database applications available from third-party developers. Several were evaluated and Visual CE™ from Syware, Inc. was chosen because of its easy to construct user interface and its inherent ODBC drivers for Windows® CE. (Syware has recently announced the release of Visual CE 4.0, more information at www.syware.com).

The next decision point in the project was to decide exactly which H/PC would be used for the PrimeSource merchandising fleet. Again, there are many, many choices of H/PC units. After careful examination of the affordable choices in the marketplace, the LG Phenom Express from LG Electronics (www.lgphenom.com) was chosen because of its ample memory (8mb); spacious keyboard; its large, bright backlight touchscreen; and built-in 21.6 MHz modem.

Building and testing the SCR system

Once the database software and hardware platform had been chosen, the next step was to actually build the database application. The development of Visual CE applications is done on a desktop unit using Windows 95 or Windows NT. Input fields on the Visual CE form must be tied to fields in a relational database. Visual CE provides a quick and easy way to create databases, which are then downloaded to the H/PC (or Palm-size PC). Once the database definitions were complete, an electronic replica of the paper SCR form was constructed, downloaded to the H/PC and then tested for accuracy. The data collected with the electronic form is kept in the memory of the H/PC and will remain there as a backup. The real power of Visual CE comes in its ability to synchronize with any ODBC compliant database, like Microsoft Access. All that is required prior to the first synchronization is an ODBC definition telling Visual CE which relational database to synchronize with. Using Windows CE Services, Visual CE will synchronize the database information stored in the H/PC with Microsoft Access tables. It will even create the Microsoft Access tables for you on the first synchronization, saving a great deal of time and effort.

The application was tested thoroughly and two H/PC units were configured and installed with the electronic SCR application. The H/PC units were assigned to two merchandisers with territories close to headquarters, and they put the application to the test. The use of H/PC technology was a welcome addition and generated genuine

John Phillips is currently the Vice President of Information Services and Chief Information Officer of Processors Unlimited, Inc., an industry-leading reverse distribution and logistics firm located in Dallas, Texas. Prior to his current appointment, Mr. Phillips served as the Director of MIS for PrimeSource Building Products, Inc. and h several key positions with Frito-Lay, Inc. and Texas Instruments, Inc. Mr. Phillips resides in Plano, Texas along with his wife, Kay, and children Jordan, Will and Christian.

excitement as it was demonstrated to store personal. The electronic signatures of an authorized store representative, naturally, was key to a general acceptance of electronic service call reports.

Remote data transmission a must

While capturing the SCR data on the H/PC was a success in itself, the real value of the project was the ability to accumulate and organize the SCR information accurately - and quickly! That meant that our nationwide fleet of merchandisers had to be able to transmit their SCR data electronically, not in a paper fashion. Windows CE Services and Visual CE made a perfect combination when it came to remote data transmissions.

A Windows NT machine was set up at headquarters with Windows CE Services and Visual CE to act as the recipient for each merchandiser's SCR data. Remote Access Services (RAS) was configured on the NT machine to accept dial-up connections from each H/PC, complete with NT authentication. Each H/PC was set up with a dial-up networking entry to be able to connect to the NT machine. A nice feature of Visual CE is its ability to automatically synchronize ODBC data on connection to Windows CE. When an H/PC dials the NT machine, Visual CE will begin synchronizing the SCR data in the H/PC with the Access tables residing on the NT machine with no intervention. Once synchronization is complete, the merchandiser terminates his or her connection. Some back end processes were added to gather up all the SCR records and save them off into a single history table for easy reporting.

A smooth roll out

The roll out and implementation of the project was very smooth. Each H/PC was configured and tested at the corporate headquarters. Specific customers were added to each merchandiser's Access tables and an initial synchronization was performed before shipping out the H/PC units to the field. The merchandisers were trained in large groups across the nation, using PowerPoint presentations. Each merchandiser was given an internally-developed user manual, which covered every facet of the H/PC, the electronic SCR application and data synchronization. Even he most novice computer user was able to n this application and easily transmit SCR ata. Throughout the testing phase of the project, there were no discernible problems.

Once the application was rolled to the fleet of merchandisers, synchronization problems started appearing. In some instances, the merchandisers were prematurely terminating the data connection to the NT machine before the synchronization had finished. In other instances, the connection would simply "drop" for no explained reason. In either instance, the merchandiser is instructed to attempt synchronization again. If it does not work the first time, it usually will work again on the second or even third try. Work continues with Microsoft and Syware to find a permanent solution, which will allow synchronization the first time, every time.

Every project has its lessons. For simplicity's sake it was the intent to have only one set of global tables that each and every merchandiser would synchronize against. Since each merchandiser has a unique set of customers, a unique name and a unique servicing distribution center, it was not possible to do this. Ultimately, four distinct tables were set up for each and every merchandiser and their H/PC would synchronize against only those tables. On a nightly basis, all the individual SCR tables are merged together into one table for reporting purposes.

Another good use of the platform emerged that saves the Company even more time and dollars. Each week, a 10-minute voice-mail message, giving instructions to the merchandisers, was recorded by the Merchandising Coordinator and sent out. This "merchandising hotline" voice mail system was replaced with a Visual CE form. Each time a merchandiser sends his or her SCR data to the NT machine, the "hotline" information is sent down to the H/PC, allowing the merchandiser to read the information at his or her leisure, rather than franticly writing the information down as it is heard on the phone.

A cost-saving success

A natural accompaniment to the H/PC units would be the ability to print. With Windows CE 2.0, the ability to print was built into the operating system. There are portable, infrared printers that are now reaching the marketplace that make a logical companion to the H/PC. One such unit, a DPU-3445 battery-powered thermal printer from Seiko has tested very well so far. With this new technology, merchandisers would be able to create a hard copy of their work, including printing SCR data to be left at the store, the merchandising hotline information, Pocket Word, Pocket Excel and Pocket Outlook documents, as well as E-mail and faxes.

The use of H/PCs to gather remote point-of-sale merchandising information has proven to be a viable solution. As with all information systems, what you do with the data determines how successful the project is. In terms of dollar savings, PrimeSource is enjoying the luxury of eliminating a great deal of paper (and printing costs), long distance phone bills, postage costs and manpower associated with sorting and filing paper. The integration of operating system platforms (Windows CE, 95/98, and NT) make the building of true information systems easy and affordable. New applications for Windows CE are arriving almost daily and with them comes the ability to utilize H/PC technology with a much broader audience.

For PrimeSource Building Products, the project is a success and puts the Company well ahead of its competitors. Other areas of the business may benefit as well from this platform, including the outside sales force. With the rapid changes in Windows CE, PrimeSource is evaluating using other units to replace the current H/PC technology that may involve larger, color screens and more functionality. In any event, the emergence of the H/PC has become a positive contribution to PrimeSource and will continue to be that way for a very long time to come. ■

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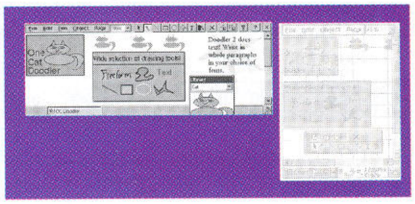

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Quick Tips

& PC Companion Tricks

by Jim Christian

Contributing Editor, Handheld PC Magazine, *and CompuServe Windows CE Forum Sysop*

This is the first installment of resident tipster and Contributing Editor Jim Christian's 100-tip blow out! Check out the Sep/Oct 99 issue for another 50 (or more) tips on getting the most out of your PC Companion.

1. Edit PowerPoint Files on H/PC

The Pocket version of PowerPoint that comes on all H/PCs or H/PC Pros doesn't allow one to edit PowerPoint (.ppt) files. But Pocket PowerPoint Editor does (see Screen 1). Checkout the software on this web site: www.geocities.com/SiliconValley/Code/4543/index.html. It lets you create your own Pocket PowerPoint presentations, or edit existing ones on the H/PC. A demo version is also available at www.cemonster.com.

Westek's (www.westek.com) PowerPoint Companion allows you to convert Pocket Word documents into Pocket PowerPoint presentations. It even installs title page and bullet page templates to speed up the creation process. You can also choose the font and background colors with this program during the conversion.

2. Put date and time in your system tray

Checking the time is no problem on a PC Companion. It's displayed all the time in the system tray. But you have to open Calendar for the date. I check the date often, and want it fast. One of my favorite utilities is TrayDate. It displays Date and Time in the System Tray. Tap it to bring up a 3-month calendar. My advice is to put it in your Start Up folder so it automatically gets loaded when you have to reboot. Get it free at www.developer one.com/TrayDate/home.htm or www. cemonster.com.

3. Quick fix for synchronization problems

Sometimes I'll connect my H/PC to my desktop PC (cable or IrDA) and it won't synchronize. The quick fix I've found for this is to open Mobile Devices on my desktop and deselect "Enable mobile devices" in File/Communications menu. Then enable it again. I've gotten into the habit of deselecting the "Enable mobile devices" after each synch. The next time I open Mobile Devices, a dialogue box pops up automatically and I check the box.

4. Partner your PC Companion with work and home PC

Windows CE 2.0 and above devices can "partner" with two desktops. This means you can set up data synchronization with your work and home desktop PCs, or any two PCs. You cannot, however, synchronize e-mail with more than one. You can connect your PC Companion to as many desktop PCs as you want, and log on as a "Guest." This lets you copy files back and forth and install software onto the PC Companion. A Guest cannot synchronize Contacts and Calendar data.

5. $100 of FREE stuff for your H/PC

Thinking about buying a new H/PC before July 31, 1999? If so, get a free Kingston 8M CompactFlash card, Microsoft Expedia Streets and Trips 2000 from Microsoft. Visit the Microsoft site below for a form to send them:

www.microsoft.com/windowsce/
products/hpc/q1hpcpromo.asp

6. Help for Portuguese users/developers!

Do you speak Portuguese and have a PC Companion? This Portuguese-language mailing list has been created to help Portuguese users and developers of the Windows CE operating system. For more information, log on to:

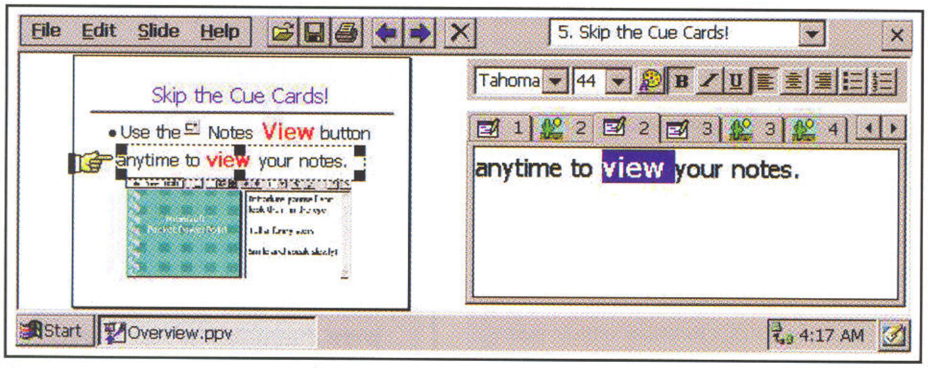
www.onelist.com/subscribe/
CEemPORTUGUES

7. Want to read Adobe Acrobat files on a PC Companion? Not yet, but...

As of right now, the only way to do this is to buy the full version of Adobe Acrobat 4.0, convert the .pdf file (the Acrobat format) to text or HTML, and then load it onto your PC Companion. I don't know if a .PDF reader for the PC Companion will be coming anytime soon, due to CPU horsepower and storage space issues.

Adobe has a site that will translate online .PDF files to HTML format. It also gives more information on conversion: access.adob com/adv_form.html. Another Adobe site w information about .PDF conversion is found at:

access.adobe.com/access_tools.html



Skip the Cue Cards!

• Use the Notes View button anytime to view your notes.

anytime to view your notes.

Screen 1: The Pocket PowerPoint Editor lets you create and edit PowerPoint presentations on your H/PC.

8. An H/PC Pro-to-cell phone link

A friend of mine successfully sent an e-mail from her HP Jornada 820e using her Nokia cellular phone. She used a TDK Global Freedom 5660 modem, TDK GSM Activation Kit and a Nokia 6110 cellular phone. She said it was a no-brainer to install and all came up instantly with installing software from the HP (www.hp.com). Check out www.tdk.com/ and www.nokia.com/ for more. Nokia told me that their model 8810 can be upgraded to software version 4.05 (press *#0000# for your version) and it will work with HP's Jornada 680 for Web browsing and e-mail...cool! Take your Nokia to your reseller for an upgrade. Maybe other models work as well, also.

Another great duo is HP'S Jornada 680 and Ericsson's SH 888 cell phone. The 680 communicates with the SH 888 via its IrDA interface. Short Messaging Software from Trio is is available at www.hp.com/hand held. It looks super and the IrDA interface works quite well between the two. It's easy to edit the SH 888 phonebook and IR it to SMS.

9. Do this before you attempt an IrDA synchronization

I don't use my infrared port for synchronizing, but it is supported by PC Companions. Some users have reported that you must first establish the partnership between the H/PC and a desktop PC, via a cable, before you may use IR synching. Try it out if you have a problem.

10. Free software tracks geneology

Pocket Pedigree is the beta (pre-release test) version of Phillip Hanney's genealogy software for the Handheld PCs. This beta software seems to work for me. Experiment with it by downloading it from:

www.rit.edu/~bdb7236/wince/

11. Connecting to a desktop printer

Connect your H/PC directly to the printer's serial port using the serial cable that came with your device. You must also change the printer's settings to use the serial port instead of the parallel port in W9X's Control Panel. Of course, be sure to change the settings back when you are finished.

If the printer does not have a serial interface, you'll have to purchase a serial-to-parallel converter for around $50 (see the Printer article, page 31 this issue). You connect your serial cable to the device, and then connect the device to the parallel port of the printer. The advantage is you don't have to change the printer's settings.

You could also look into buying an ultra-portable printer. I bought a refurbished Canon BubbleJet C-80 at PCMall for $149. Canon has drivers for CE, and the BJC-80 has a built-in IrDA port that works fine with my H/PC. Canon's rechargeable battery pack is an extra $100. You could also buy the BJC-50 which comes with a battery pack. (See page 31 for more on printers.)

12. Need more storage memory? Delete e-mail attachments.

I download a lot of e-mail to my HP 660, and many come with fat attachments that I don't need to keep around. One can easily free up main memory by deleting these attachments. It's easy to get rid of these files. Go to \Program\Files\Communication\Mail Attachments on your Windows CE device and delete the files. When your PC Companion is attached to your desktop PC, you can do this from the Explorer option of Windows CE Services "Mobile Devices" application.

13. Double-space a Pocket Word document

Double spacing is not supported in Pocket Word, but there is an easy way you can do it. Create a double-spaced document in your desktop PC version of Word and save it as a template. Then use Windows CE Services to copy it to your H/PC. Whenever you need a double-spaced document, open the template and you're ready to go. In fact, you can create most any type of template and send it over to the H/PC. You could format order forms, forecasts, menus, recipes, real estate listings, medical forms, expense accounts, and more. Look around your company for forms you use a lot and send a template to your H/PC. Great Microsoft Word & Excel templates can be found at:

officeupdate.microsoft.com/
welcome/word.htm
/officeupdate.microsoft.com/
downloadCatalog/dldExcel.htm

Take caution, though, as headers, footers, & margins may not be retained. Check the margin each time you print.

14. Solve problems with Windows CE support documents from Microsoft

Microsoft has updated their free Windows CE support Web site. Check it out for answers to common problems experienced by Windows CE users:

www.microsoft.com/windowsce/
Enterprise/resources/kit/support.asp

A typical Knowledge Base support doc that answers questions about synchronizing is found at:

support.microsoft.com/support/
kb/articles/q191/3/74.asp

15. "Find" patch for Palm-size PC users

Some Ps/PC users have reported a problem with the Find function on their devices. This is a known problem with the Palm-size PC, and Microsoft has created a patch that fixes it. If you experience the problem get the patch at:

www.microsoft.com/windowsce/
Products/download/updates.asp

16. Opening Pocket Word and Excel documents on your desktop

This is easy. Just copy them from your H/PC to your desktop PC using Windows CE Services Mobile Devices. They are automatically translated into the appropriate format. If someone sends you a Pocket Word or Excel document, you can use Mobile Devices to drag it to your Window CE device, and then back again to your desktop PC. This will convert the file to the desktop PC format. The newer H/PC Pros can save Pocket Word or Excel documents into the desktop versions format. Any H/PC user can save Pocket Word documents in rich (.rtf) or text (.txt) formats.

17. Free faxing for mobile users

E-FAX's free faxing service (www.efax.com/) gives users a free personal fax number. Fax's can be sent to this number and when a fax is received, E-FAX immediately e-mails you the fax as a .tif file attachment. Using a graphics program that views .tif files, you can view the fax. Neat, huh? Receiving a fax is as easy as receiving an e-mail.

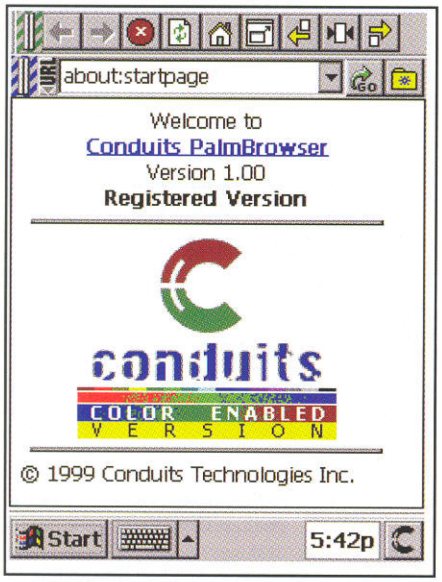
18. Synchronize with Outlook Notes

I use HPC Notes 2.03 (Phatware, www.phatware.com) to synchronize with my Outlook 2000 Preview Notes. It works flawlessly and Phatware has a 30-day trial program (Maybe by the time you read this Version 3.0 will be out as I'm beta-testing it now. How'd you like multiple folders? I'd love it! Stay tuned). If you're willing to take a chance, the following Web site has a demo version of a program called SynCEnotes V0.95, which also helps bring your Microsoft Outlook notes to your H/PC. Be aware that any "beta" software is pre-release and can sometimes cause problems. Backup your PC Companion before experimenting with beta software. Go to:

home.munich.netsurf.de/Christian.
Weinberger/syncenotes.html

19. Free Web browser for Palm-size PC

PalmBrowser 1.00 (see Screen 2), an online Web browser for the Palm-size PC, is available for free from Conduits Technologies (www.conduits.com/ce/). Another Palm-size PC Web browser, named ProxiWeb (see Screen 3), is available for free from ProxiNet (www.proxinet.com/ proxiweb/wince.html).



Screen 2: PalmBrowser is an online Web browser for the Palm-size PC, available for free at www.conduits.com/ce/.

20. How to backup or restore just one file

Windows CE Services lets you backup and restore your PC Companion, but it's an all-or-nothing proposition. If you want to backup or restore one file, or a small number of files, you'll have to go with a third-party backup solution. bSQUARE offers bUSEFUL Backup (www.bsquare.com), which lets you backup and restore selected files, databases and even the registry. Another solution is HPCVault (members. aol.com/anyware/wce/). I use both.

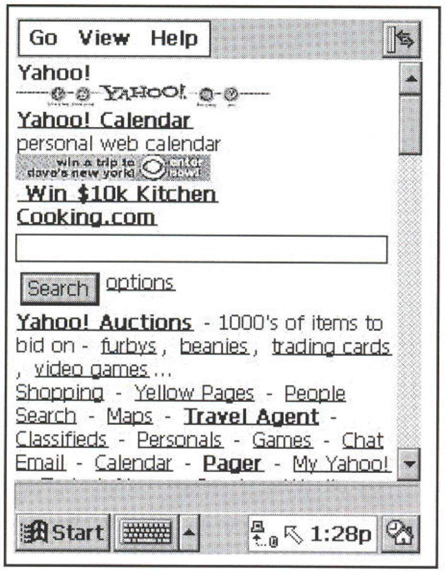
21. Pocket Streets 3.0 with Palm-size PCs

Pocket Streets 3.0 is out and runs on the Jornada 420 and other color-screen Palm-size PCs. I've heard, unfortunately, that files exported from Streets 98 don't work with it. Also, documentation says that it won't run from a storage card. I verified that, but you can store your maps on a PC or CF Card, if you create a "My Documents" folder on your card and cut & paste the maps in there. You can easily transfer maps to the PC Companion by first connecting your PC Companion to your desktop PC, with Windows CE Services installed, and then:

(a) Open up Explorer on the desktop PC, highlight the map file, press Ctrl C, then go to the Storage Card on the PC Companion and press Ctrl V; or

(b) Drag the map files from the desktop to the "My Documents" folder on the Storage Card.

You can find any U.S. city map on the desktop and transfer it to your PC Companion. Then all you have to do is type in a street address and it comes up. Cool! For more information, visit:


Go View Help
Yahoo!
Yahoo! Calendar
personal web calendar
win a trip to dave's new york!
Win $10k Kitchen
Cooking.com
Search
options
Yahoo! Auctions - 1000's of items to bid on - furbys, beanies, trading cards, video games...
Shopping - Yellow Pages - People Search - Maps - Travel Agent - Classifieds - Personals - Games - Chat
Email - Calendar - Pager - My Yahoo!
Start
1:28p

Screen 3: Another Palm-size PC web browser is ProxiWeb, available for free at www.proxinet.com/proxiweb/wince.html.

www.microsoft.com/windowsce/
products/download/maps.asp

22. Microsoft Money for Windows CE?

A source inside Microsoft said that a new miniature version of Money might be coming. Microsoft has yet to decide whether to offer Money as a ROM upgrade, or sell it separately as a stand-alone application. That would be a dynamite application. Keep reading this column or our Web site for an announcement.

23. Shopper.com for comparing PC Companion prices

When I want to buy a new one (which seems to be quarterly) I always go to CNET Shopper.com to check out current prices (go to www.shopper.com/idx/HANDHELDS/). They seem to come up with some of the best prices.

24. CompactFlash problems with your Nino?

Philips Nino Palm-size PC needs a software patch to use a CompactFlash Card. You can download the patch at the Philips Nino homepage. Then connect the Nino to your desktop PC and run the downloaded program from your desktop PC. It will automatically install the patch on the Nino. www.nino.philips.com/support/updates.html

25. Mobile Channels users be careful upgrading to Internet Explorer 5.0 on your desktop PC

Initial reviews show some problems, so make sure you can delete I.E. 5.0 and go back to 4.01 if you use Mobile Channels a lot. Some reports say that if you delete all your Mobile Channels and then install Internet Explorer 5.0, it works.

26. International versions of Windows CE Services

Are you outside of the U.S. and considering upgrading your Windows CE Services to version 2.2? International versions are now available. I saw French, German and Italian versions available on the Philips Nino Web site: nino.philips.com/support/ services.html. I recommend that most users upgrade due to the bug fixes and other features you'll get. Microsoft does not download CE Services from its Web site, but does have a page of links to other sites, at:

www.microsoft.com/windowsce/
products/tips/wceserv.asp

27. IMDb a CE-friendly movie review site

IMDb (Internet Movie Database) is an international organization that provides useful and up to date movie information online, for free. It currently covers over 170,479 titles with over 2,462,516 filmography entries, and is expanding continuously. Check it out at: www.imdb.com/. It should work with any PC Companion browser.

28. Beefed up security for H/PC Pros

Beef up your security with Microsoft's 128-bit Secure Sockets Layer Add-on for Microsoft Pocket Internet Explorer, Version 3.0. Higher Encryption for Transactions (available for use in the U.S. and Canada Only). The 128-bit security add-on for Pocket Internet Explorer version 3.0 gives you the highest level of protection possible whenever you access a Web site that supports 128-bit security. This means that you can use credit cards or make other financial or confidential transactions over the Internet with the highest level of security available. It was the first program I added to my HP Jornada 680. Download it at:

www.microsoft.com/windowsce/
products/download/128ssl.asp

29. Tough games for Palm-size PC players

Whoa...I can't beat any of them. Try games, like the Rubik Cube, at:

www.alfabit.net/Products/products.htm.

30. Loose your cookies? Want to loose your cookies?

Cookies are files that keep track of things you do on the Internet. They're not stored in the cupboard, but in the folder labeled "Temporary Internet Files." They are accessed by the sites you visit to keep track of what you're doing on their site. Use Explorer to delete them periodically from the folder if you don't want your visited Web sites to keep track of you. Many desktop PC Web browsers let you purge your Temporary Internet Files folder periodically, but that option does not appear to be in Pocket Internet Explorer.

31. iMac working with Windows CE Services? Almost!

I've seen reports from individuals who are using Windows CE Services 2.2 installed on an Apple iMac using VirtualPC, to synchronize with a PC Companion using an IrDA interface. Loading application from the iMac to the PC Companions still seems to have problems.

32. Using Compact Ethernet Cards with the Palm-size PC

Chris De Herrera, our dynamite Contributing Editor, has an article on Microsoft's Web site that shows you how to link your Palm-size PC to a desktop PC using a fast Ethernet connection. Check it out at:

www.microsoft.com/windowsce/
products/tips/using/com-981015.asp

33. Never interrupt synchronization! Never!

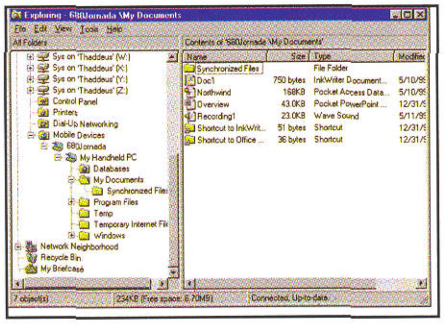
I have pressed Cancel a number of times in my life while doing a synchronization, and I always end up with duplicate entries in my Contacts database. They can manually be cleared out, but with over 1,300 Contacts that is near impossible. Always let a synchronization finish, regardless of what you thing you need to do right now.

34. HP Viewer bug fix for the Jornada 680

HP Viewer is an application on Hewlett-Packard's Jornada 680 and 820 H/PC Pros. It provides a summary view of the Pocket Outlook data, accessible from one screen. After I first synchronized my 680 with Outlook 2000, I had problems with the Calendar View in HP Viewer – it would hang up, with the hourglass icon spinning away. I fixed it by changing my recurring appointments in Outlook 2000 from "No end date" to something shorter, like 20 weeks for a weekly, or three years for a yearly. When I re-synchronized with Outlook, everything was fine. HP has acknowledged a few problems with this application and put a fix on their Web site. Go to www.hp.com/handhelds for more.

35. Wait for the modem to disconnect

I discovered this on my Jornada 680, but it probably applies to any PC Companion with a built-in or PC/CF Card modem. I go online frequently to check e-mail and browse the Web. When I'm finished, I tap the Disconnect icon and immediately remove the RJ-11 cord, and sometimes lock up my H/PC. I believe the reason this happens is that the modem is not completely disconnected. I now wait 5 seconds before taking the cord out, and I don't have the problem.



Name	Size	Type	Modifie
Synchronized Files		File Folder	
Doc1	750 bytes	InkWriter Document...	5/10/9
Northwind	168KB	Pocket Access Data...	5/10/9
Overview	43.0KB	Pocket PowerPoint ...	12/31/
Recording1	23.0KB	Wave Sound	5/11/9
Shortcut to InkWrit...	51 bytes	Shortcut	12/31/
Shortcut to Office ...	36 bytes	Shortcut	12/31/

7 object(s) | 234KB (Free space: 6.70MB) | Connected, Up-to-date.

Screen 4: The Mobile Devices application, installed on your desktop PC by Windows CE Services, has a file Explorer that lets you access and explore files on your PC Companion from your desktop PC.

36. Browse your PC Companion from your desktop PC

Windows CE Services provides a secret door into your PC Companion – the Mobile Devices application. Once you connect your H/PC or Ps/PC to your desktop PC, with Windows CE Services installed, you can open Mobile Devices, and access Explorer from the File menu (see Screen 4). Windows Explorer pops up, letting you view, delete, rename, and move any file on your desktop PC or your PC Companion. You can also select Application Manager from Mobile Devices' Tools menu, to safely and completely remove from your PC Companion any application you have installed.

37. HTML "tags" supported by Pocket IE

For the more technically-minded Web surfer, Microsoft has posted a Web page that lists the support in Microsoft Pocket Internet Explorer versions 1.0, 1.1, 2.0, and 3.0 for the following items:

- Hypertext Markup Language (HTML) tags
- Multimedia Internet Mail Extension (MIME) formats
- Security types
- Universal Resource Locator (URL) formats
- Scripting languages

Their web site is at:
support.microsoft.com/support/
kb/articles/q158/4/79.asp

38. Don't move Pocket Outlook data to storage card

You can back up Pocket Outlook data to a storage card, but you can't access the data files from the card. The Pocket Outlook database files must be in the main memory. You wouldn't want to put it on a storage card, because if you forget your card you forget all your Contacts.

39. PalmPilot users! Make the move to Windows CE easier

Palm-size PCs come with their version of a handwriting recognition program named Jot (www.cic.com). PalmPilot users switching over to Palm-size PCs can set Jot's input options to the simplified character set. The

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alphabet strokes are almost the same as the Pilot's Graffiti handwriting recognition system. Also, the Casio E-100s are supposed to include software that converts Pilot data to the E-100's format.

40. Synchronizing Windows NT desktop PCs with PC Companions

There are problems synchronizing an NT4 desktop PC with Service Pack 4 installed, and older versions of Windows CE Services. You need to install the latest version of Windows CE Services (2.2), then apply NT4 Service Pack 4 to the desktop PC, reboot & it all should be fixed. Make sure, though, the baud rate is set the same in your device as in the Port and Modem area of your desktops Control Panel. I have them all set at 115K. More on NT is in Windows CE Services 2.2 read.me file. Also, read the read.me file for NT instructions.

41. Rechargeable AA and AAA batteries!

I use rechargeable NiMH AAA's in my Casio E10, and they work flawlessly. The most important thing to look for in NiMH rechargeable batteries are capacities of 1,500mAh/-720mAh or higher. If you have a monochrome-screen PC Companion, you may be able to get by with single-use throw-aways. The cheapest I've seem are from a company name Costco. Consumers Report Magazine has said they are all about the same. Here are a couple of online sources for batteries:

www.batteryshack.com/ and
www.radioshack.com/

42. Service Pack for Windows CE Services

Microsoft is working on a Service Pack for Windows CE Services that will resolve driver and I/O port conflicts that have caused users headaches trying to establish synchs between CE devices and PCs via the serial & IrDA ports. It should be here this fall. Hurry up, guys.

43. "Books-on-Tape" on your PC Companion

Audible (www.audible.com) is coming out with a new program that will let you download audio books to your PC Companion. You'll be able to listen to any of their Books On Tapes. I can't wait till Stephen King talks to me from my Jornada 680...now that's scary!

44. JAVA Programmers!

Look at (www.wabasoft.com) for Waba, a programming platform that lets developers write one program that can run on PalmPilot and Windows CE devices and on any machine that supports Java. A game called Bubble comes with source code. This looks like an inexpensive way to write little applications for a Palm-size PC without the over $200 cost of Visual C++ and the over $200 cost of the CE Toolkit for Visual C++.

45. Why I use a screen saver

I always keep my Jornada 680 in the continuous synchronization mode. It's always in the cradle, with the screen on bright. In addition, the unit is on all night, recharging. Although the screen is good for 1,000s of hours (and I'll have a new one before that) I use a screensaver that turns the screen off. Check it out at www.xoanan.com/

46. Reading E-books

I have never done this on previous H/PCs, but it's a new ballgame today with my Jornada 680 (and its optional 21-hour extended battery). Here are some sites to download e-books:

www.memoware.com/ (for Doc files)
www.peanutpress.com/ (coming beta on more contemporary books)
pilot.screwdriver.net/
www.gutenberg.net/
www.onlineoriginals.com/welcome.html
www.bibliomania.com/

See the article on page 38 for more on book reader software.

47. No H/PC Pro upgrade for Sharp Mobilon 4000 series

According to a Sharp USA spokesperson, Sharp will not offer an upgrade chip for the 4000 series of Mobilon H/PCs. Based on consulting with their customers and reviewing inquires, Sharp believes that the overwhelming majority of their 4000 series customers are not interested in the added functionality and would not purchase such an upgrade chip. Sharp feels that they cannot justify the cost of creating the upgrade for small minority of customers who have requested it. Sharp regrets any inconvenience this has caused for any of their customers who wished to obtain this upgrade. This writer continues to say "No Comment".

48. Cheat at solitaire

Do you play the 3-card version of Microsoft's card game, and get down to the end and are losing? If you want to change to draw one card, hold Ctrl-Shift-Alt and now you can draw one card.

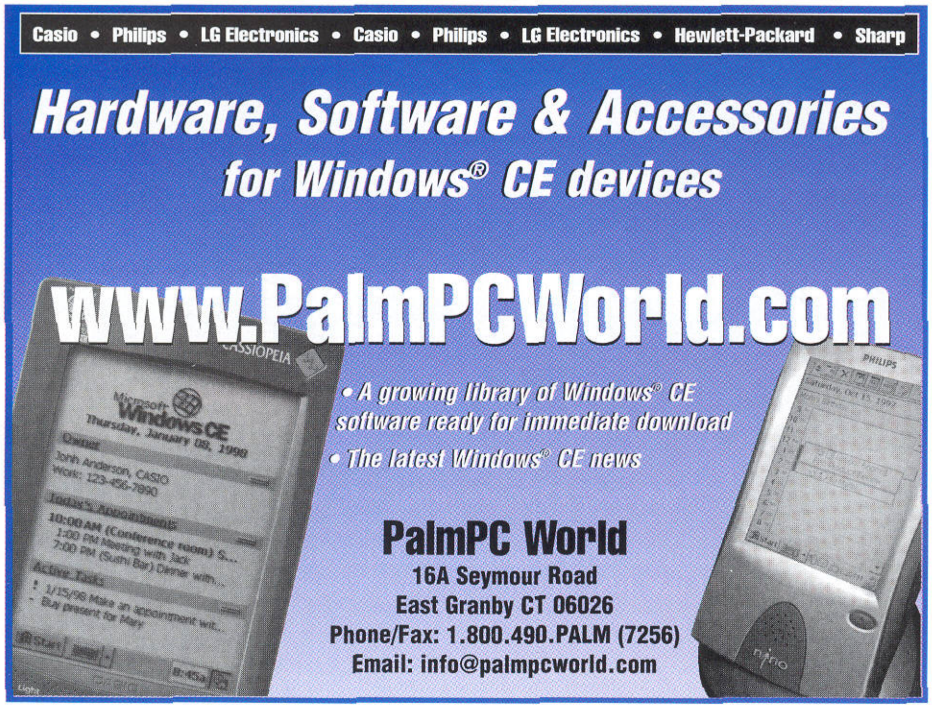
49. Forget Pocket Word .DOC files. Use .TXT files to save space

Some .doc files take twice the storage space as .txt files. Consider saving your Pocket Word documents in .txt format if they don't have formatting you need to save, and if you're running low on storage space. It's also a good idea if you have to send them to someone else. They may not be able to read the Pocket Word document format.

50. HP Jornada 420 Palm-size PC Patch

A new Jornada 420 patch correc CompactFlash card problems. Download at

www.hp.com/cposupport/handheld_
computers/software/pcmcia.dll.html



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1:00 PM Meeting with Jack
7:00 PM (Sushi Bar) Dinner with...
Active Tasks
1/15/98 Make an appointment wit...
Buy present for Mary
Start
8:45a
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PC COMPANIONS

At A Glance

Handheld PCs / H/PC Pros

Casio

Contact: your local Casio dealer or Casio, Inc.; Phone: 201-361-5400; Fax: 201-361-3819; Casio accessories information 800-836-8580; Web: www.casio-usa.com/hpc/

Casio CASSIOPEIA A-20 - $599.95

One of the smaller, less expensive grayscale display H/PCs running Windows CE 2.0. The A-20 is easy to carry with you and you'll get better battery life (15-20 hours) than a larger, or color-screen H/PC. Includes a variety of bonus software, including Casio Project Management Software and Find File Tool.

Compaq

Contact: your local Compaq dealer or Compaq Direct Plus; Phone (USA): 800-888-5858; Web: www.compaq.com

Compaq C-Series 2010c (color screen) - $799

One of the smallest 1/2 VGA color-screen H/PCs running Windows CE 2.0. The 2010c is easy to slip in a pocket or purse, and the color screen is easy to see. Battery life is short (around 3 hours), so you'll want to get a spare battery pack if you go on long trips. Built-in modem lets you send/receive e-mail and browse the web (slowly). Small, calculator-type keys are firm to the touch — you won't press them accidentally, but you won't type too fast.

Compaq C-Series 810 (gray-scale screen) - $499

A Windows CE 2.0 H/PC similar to the C-Series 2010 c described above, but with a monochrome screen, making the battery life much better (up to 20 hours on two AA alkaline batteries). A little smaller than the 2010c and easier to slip in your pocket.

Ericsson

Contact: Ericsson Mobile Communications; Web: www.ericsson.com

Ericsson MC16 - $749

The MC16 is the only H/PC that comes with a built-in infrared modem, letting you communicate with Ericsson cellular phones for e-mail and (slow) Web browsing. The MC16 is a small and pocketable H/PC with decent battery life (8 hrs.) because of its monochrome screen. Hewlett-Packard manufactures this Windows CE 2.0 H/PC for Ericsson, and HP is known for quality and reliability.

Hewlett-Packard

Contact: your local HP dealer or Hewlett-Packard Company; Phone (USA): 800-443-1254; Web: www.hp.com/jornada

HP Jornada 820 H/PC Pro $999

H/PC Professional Edition running Windows CE 2.1. Comes with a near-full-size keyboard and large, easy-to-read color screen. The Jornada is the first Windows CE device not to include a touchscreen. Instead, it uses a mouse touchpad below the keyboard. The Jornada is the size of a small notebook computer and you'll end up carrying it in your briefcase. Fast internal modem and full-size screen makes Web browsing and e-mail fast and easy. VGA monitor port lets you use an external monitor with the Jornada for presentations and regular use. The Jornada has remarkably good battery life (15 hrs with optional high-capacity battery) for a color screen unit. The Jornada ships with an excellent suite of additional software.

HP Jornada 680 H/PC

A small, pocketable color-screen H/PC Pro running Windows CE 2.1. Has the best keyboard of any of the smaller H/PC Pros, and comes with an excellent suite of add-on software. Comes with a standard 7-hour rechargeable battery, with an optional 21-hour extended battery pack.

HP 660LX Palmtop PC - $849
HP 620LX Palmtop PC - $699

Two of the most popular Windows CE 2.0 H/PCs. The 620LX and 660LX are slightly larger than the smallest H/PCs and still slip into an outside coat pocket or a purse. Their keyboard is smaller than those of the newer H/PC Pros, but still relatively easy to touch type on. Their 640x240 color screen is easy to see and their battery life is reasonable (6-8 hrs). The 660LX ships with 32 MB of internal memory and a fast, 56 Kbps fax/modem card. The H/PCs are well manufactured and ship with an excellent suite of additional software. Both can be upgraded to Windows CE 2.1 and the H/PC Pro applications.

HP 360LX Palmtop PC - $549

One of the smaller, more pocketable Windows CE 2.0 H/PCs. The 360LX comes with a monochrome screen that is reasonably easy to see, good battery life (8 hrs) and a nice suite of add-on software.

PhatWare Corporation specializes in software for the Handheld PC.
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http://www.phatware.com

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- Manage databases with HPC dbExplorer.
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HPC dbExplorer
HPC NetProfile
HPC Trace

650 299-0110
650 299-1369 Fax

Hitachi

Contact: your local Hitachi dealer or Hitachi Home Electronics; Phone (USA): 800-HITACHI; Web: www.hitachi-ce.com

Hitachi HPW-600ET H/PC Pro – $1,199

An H/PC Pro without a keyboard. The tablet-style Windows CE device sports a 7.5" diagonal full-VGA 640x480 backlit touchscreen displaying 65K colors. The touchscreen is used for opening applications and entering data. Hitachi will market this device to value-added resellers, who in turn will target vertical markets and specific applications solutions.

Hitachi HPW-200EC - $799

A fast Windows CE 2.0 H/PC with a near-full-size, touchtypeable keyboard and an easy-to-see 640x240 color screen. Internal modem facilitates e-mail and (slow) Web browsing. The VGA-out port lets mobile users make Pocket PowerPoint presentations. Good (10 hr.) battery life. An excellent choice for mobile users who need to do a lot of text and data entry while on the road.

Hitachi HPW-20E8M - $599

The monochrome screen version of the Hitachi H/PC described above has excellent battery life (20 hrs) and comes with a slower internal modem. For users who want a touchtypeable H/PC, need the better battery life, and don't mind a monochrome screen.

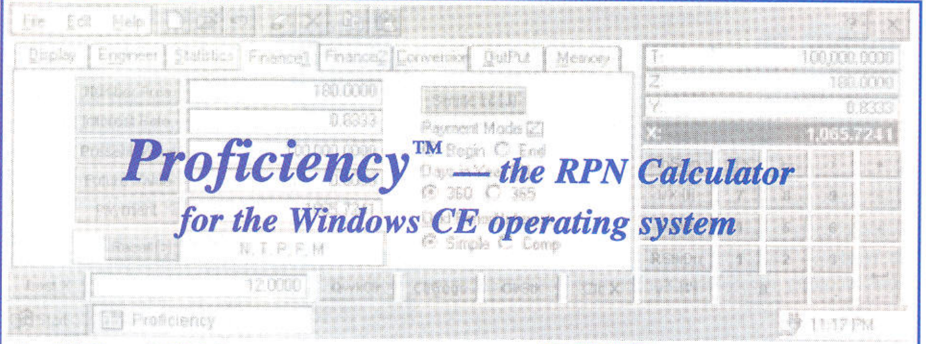
IBM

NEW!

Contact: IBM Corp. Phone: 888-411-1WEB (U.S.), Web: www.pc.ibm.com/us/products/workpadz50/index.html

IBM WorkPad z50 – $999

IBM's new Windows CE Handheld PC Pro comes with a full-size, 8.2" 64K color display, an 95% QWERTY keyboard, 16 MB RAM (expandable to 48 MB), and a standard battery giving you up to 8 hrs continuous use (16 hrs with optional extended capacity battery). The z50 is the size of a mini-notebook computer and weighs 2.66 lbs. The 50z comes with a built-in 33.6 kbps modem and will accept IBM's 340 MB Microdrive for extra data storage. A list of retailers is available online. Go to above Web site and click on "how to buy."



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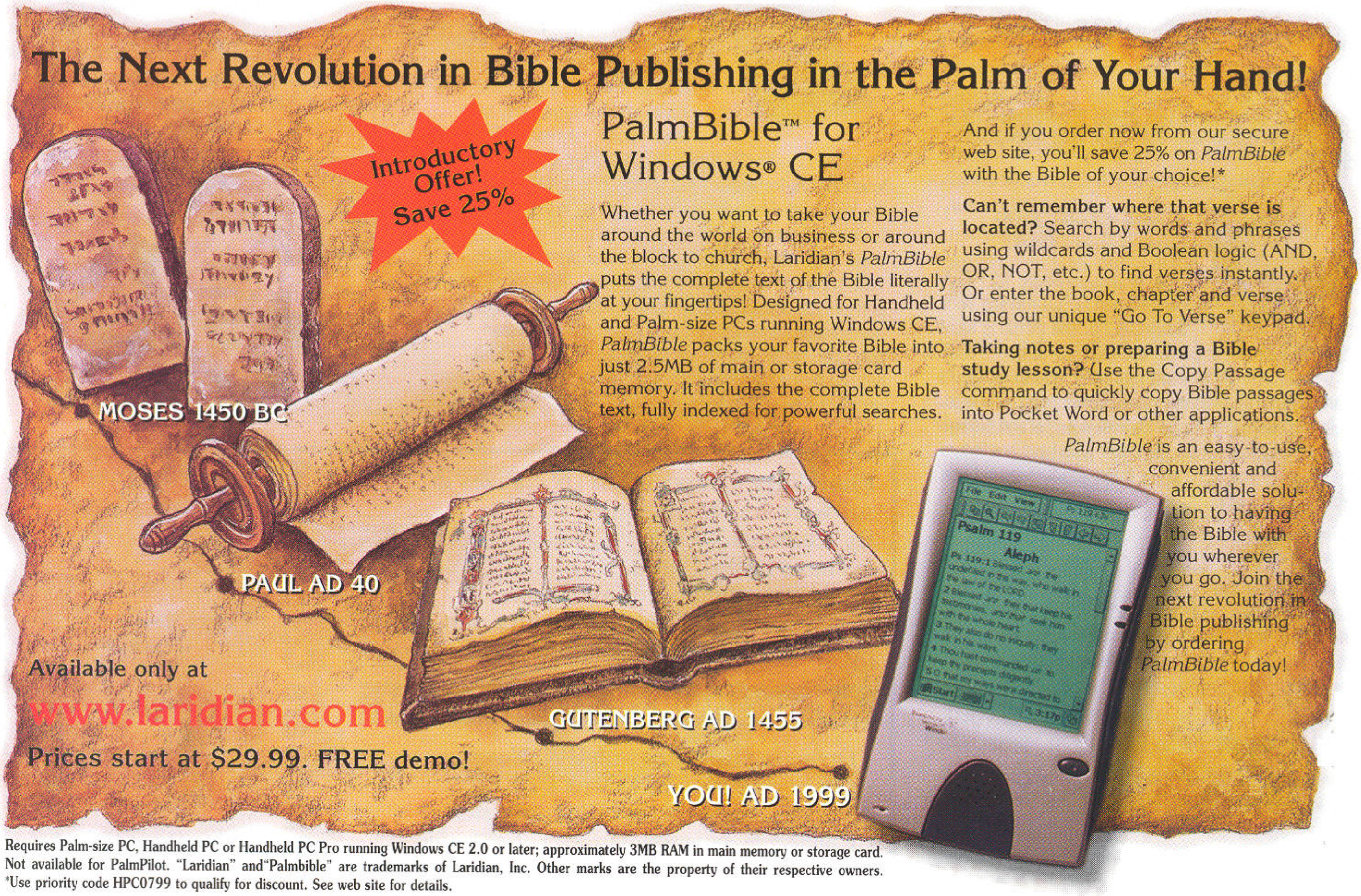

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Itronix

Contact: Itronix; Phone: 800-441-1309 or 509-624-6600. Web: www.itronix.com

T5200 – $varies

The T5200 is a rugged Windows CE Handheld PC designed for specialized, demanding field applications. It comes with a monochrome touchscreen, high-capacity battery, a built-in modem, and options for built-in wireless communications.

LG Electronics

Contact: local LGE dealer or LG Electronics Customer Information Center; Phone (USA): 800-243-0000; Web: www.lgphenom.com

LG Phenom Express - $679

LG's H/PC Pro comes with a near-full-size touchtypeable keyboard. LG stayed with a 1/2-VGA (640x240) screen, making the Phenom Express one of the more compact H/PC Pros *(but still too big to carry in your pocket). It has decent* battery life (12 hr) and a fast, built-in 56 kbps modem for communications and Web browsing. It also comes with a standard parallel printer port, making it easier to connect to printers wherever you find yourself.

LG Phenom Ultra - $599

Manufactured for LG by Hitachi and based on the HPW-200EC Handheld PC described earlier. A fast Windows CE 2.0 H/PC with a near full-size, touchtypeable keyboard and an easy-to-see 640x240 color screen.

LG Phenom -$399

Smaller, monochrome screen Windows CE 2.0 H/PC. Easier to carry in your pocket and better battery life (20 hrs) than the larger color- screen models. The tradeoff is a smaller key*board with a screen that is not quite as easy to read.*

NEC

Contact: local NEC dealer or NEC; Phone: (USA) 888-8-NEC-NOW. Web: www.nec-computers.com

NEC MobilePro 800 Enterprise PC Companion - $999

An H/PC Pro with a big color touchscreen and near-full-size keyboard. The MobilePro 800 is the size of a small notebook computer and you'll carry it in your briefcase or shoulder bag. The built-in 56 kbps modem should be fast enough for serious browsing and e-mail. The USB port will let you add fast peripherals and the VGA-out cable lets you connect to an external monitor for Pocket PowerPoint presentations. The lithium-ion rechargeable battery pack is rated at 8+ hrs (consider getting an extra battery pack for long, international flights).

NEC MobilePro 770 — $800

H/PC Pro without a USB port. Otherwise it's similar to the MobilePro 800 described previously. The smaller screen makes it a little more compact and easier to carry, but you'll still be keeping this in a briefcase. The fast 56 kbps modem will speed up browsing and e-mail, but the 1/2-VGA screen means you'll be spending a little more time scrolling around on most Web pages.

NEC MobilePro 750C- $799

Another fast Windows CE 2.0 H/PC with a near-full-size, touchtypeable keyboard and an easy-to-see 1/2-VGA 640x240 color (or monochrome) *screen. The internal modem facilitates e-mail* and reasonably- fast Web browsing, but the 1/2-VGA screen means that you'll be scrolling around to see all of a Web page. The VGA-out port lets mobile users make Pocket PowerPoint presentations .

Novatel Wireless

Contact: Novatel Wireless; Phone (USA): 888-888-9231; Web: www.novatelwireless.com; Sales contact: Pinacore: 1-800-PINACOR or MobilePlanet: 800-MPLANET or online at www. mplanet.com.

Novatel Wireless CONTACT - $999.95

The only H/PC with a built-in wireless modem - if you need this capability, take a look at the CONTACT. A well-engineered unit based on the HP 360LX hardware. The wireless modem and antenna add to the bulk of this unit, making it necessary to carry in an outside coat pocket or purse. Slow wired modem is good for e-mail and limited browsing. A VGA adapter can be used with the serial port to connect to an external monitor for Pocket PowerPoint presentations.

NTS Computer Systems

Contact: NTS Computer Systems; Phone: 604-465-1040; Fax: 604-465- 3323; Web: nts.dreamwriter.com

Dreamwriter I.T. - $varies

Dreamwriter I.T. is a specialty H/PC Pro designed as a computer for students and sold to educational organizations in quantity. It is not marketed as an end-user product, although the *NTS Web site lists prices for single units.*

Philips

Contact: Philips Mobile Computing Group; Phone (USA): 888-FOR-VELO; 408-558-2200; Fax: 408-558-2222; Web: www.velo1.com. U.S. retail outlets include: CDW, CompUSA Direct; MobilePlanet, PC Connect, and PC Zone.

Philips Velo 500 (16 MB RAM) - $699

Philips Velo 500 (24 MB RAM) - $799

Philips has discontinued these H/PCs but they may still

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Protect Your Handheld Investment

The RhinoPak 1000 is now available to Palm-size PC owners. Features include a weather resistant Cordura outer, interior padding, plastic insert screen protector, elastic securing straps, and belt loop. Inside/outside mesh pockets are ideal for pens, business/credit cards, cash, etc. Black....$26. 95

The acclaimed RhinoPak 2000 "sport-ute" case for is ideal for all H/PC's with dimensions of 7.25"x4.25"x2". Features include a weather-resistant Cordura outer, padded interior, battery pouches, and pen/stylus holder. Utility pockets inside and out accommodate checkbook/passport, disks, credit/business cards, and car keys. Ideal for the user who needs his/her handheld in the office one day, on the road the next, and in the backcountry on another. Black....$49.95

Also available: RhinoPak 3000 for larger H/PC's, including the HP 660LX, and Executive Styluses for Palm-size PCs

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be available. One of the smaller Windows CE 2.0 H/PCs that slips easily into a coat pocket or purse. Has a fast processor and good battery life (15 hrs). Low-power modem good for e-mail and (slow) Web browsing. 1/2-VGA monochrome screen means that you'll be scrolling around to see all of a Web page. Memory expansion slots use Miniature Card standard. Additional "V-module" snaps onto bottom of Velo to add PC Card slot.

Samsung

Contact: Samsung Electronics America, PC Sale Marketing; Fax: 408-544-4963, E-mail: JUSTINJ@sea.samsung.com

Samsung iZZi Pro - $850 (est.)

A mini-notebook-sized H/PC Pro with a clear, full-size screen and near-full-size keyboard. The iZZi Pro incorporates a touchpad instead of a touchscreen. The fast modem and full-sized color screen should make Web browsing and e-mail fast and easy. Comes with USB port and an optional docking cradle that adds external keyboard and mouse capability. Reasonably good battery life (10+ hrs) on its rechargeable battery pack, and you can use regular AA Alkalines in a pinch. The iZZi Pro is being actively marketed to corporate accounts only in the U.S.

Sharp

Contact: your local Sharp dealer or Sharp Electronics Corporation; Phone (USA): 800-BE-SHARP; Web: www.sharp-usa.com

Mobilon TriPad PV-6000 - $999

The TriPad's "tri-mode hinge" lets you use it in three different positions: as a notebook computer with its near-full-size keyboard, as a pen- only tablet for note taking and information access, and as a "presentation easel" to display Pocket Powerpoint shows. The TriPad has a relatively good (up to 12 hrs per charge) battery life and built-in modem for e-mail and reasonably-fast Web browsing.

Mobilon Pro PV 5000 - $899

H/PC Pro with a near-full-size touchtypeable keyboard, full-VGA color touchscreen, and fast CPU. Built-in low-power modem good for e-mail and reasonably-fast Web browsing. Reasonable battery life (8 hrs per charge), but take a spare battery pack with you on long international flights. Sharp's Digital Camera Card works with this H/PC Pro (but not the TriPad).

Mobilon HC-4600 - $699.00 (256 color display, 16MB RAM, upgradeable to 32MB)

Mobilon HC-4500 - $649.00 (256 color display, 16MB RAM)

One of the few smaller Windows CE 2.0 H/PCs with a color display. Color touchscreen is easy to read in anything but direct sunlight (true of most color displays). Slips easily into your pocket and provides 4-6 hours on a fully-charged NiMH battery pack. You may want to get a spare battery pack, especially if you use the optional Digital Camera Card. Built-in modem good for e-mail and limited Web browsing.

Vadem

Contact: Vadem; Phone: 408-467-2100; E-mail: info@vadem.com; Web: www. vadem.com/home.html

Clio - $999

The hardware is identical to the Sharp TriPad (which Vadem manufacturers for Sharp). The Clio has the same "tri-mode hinge" that lets you use it in three different positions. Clio has a relatively good (12-16 hrs per charge) battery life and built-in modem for e-mail and reasonably-fast Web browsing. The Clio differs from the TriPad in its selection of bundled software, which includes the ViewFinder personal information viewer and finder.

WPI Husky

Contact: WPI Husky Technology, Web: www.wpi husky.com

Husky FeX21 — $na

The FeX21 is a Windows CE 2.0 Handheld PC ruggedized and sealed for harsh environments. It comes with an enhanced color LCD display, high-capacity battery, and wireless phone/LAN/Wan access. Husky will market this to companies and individuals requiring rugged mobility in an H/PC.

Palm-size PCs

Bcom

Contact: Bcom Electronics Inc.; Web: www.bcom. com.tw/

Mars Palm-size PC (4MB) - $379 (8MB) - $499

Comes with a built-in modem that's good for sending and receiving e-mail. The power and navigation buttons are on the top half of the left and right sides of the unit, making them easy to access, especially for a right-handed person. Unit comes with a warranty, but must be shipped to Taiwan for repairs.

Casio

Contact: your local Casio dealer or Casio; Phone (USA): 888-204-7765 or 973- 361-5400; Web: www.casio.com/hpc/e-10.cfm

Cassiopeia E-100 – $499; E-100 Plus – $599

Windows CE 2.1 color-screen "multime Palm-size PCs with a high-resolution c display and MPEG and MP3 capabili Desktop PC software included to convert MPEG, AV and Quicktime videos into movies that can be played on the E-100. High-quality MP3 recordings can be listened to in stereo via external headphones.

Casio E-15 – $399

A small, monochrome-screen Windows CE 2.1 Palm-size PC. The E-15 is smaller and lighter than the E-10/11 series.

Cassiopeia E-10 - $299.99

Cassiopeia E-11 - $399.95

Both Cassiopeia Palm-size PCs have a well-placed "rocker button" that lets you navigate up and down through items and select an option by pressing rocker button. The screen is clear and easy to see and the backlighting sufficient in the dark. The E-10 & E-11 do not ship with a rechargeable battery pack or AC adapter, and you can go through AAA batteries quickly. If you buy an E-10, you may want to purchase the optional rechargeable battery pack and AC adapter. The Cassiopeia comes with a nice set of bundled software.

Compaq

Contact: your local Compaq dealer or Compact Direct Plus; Phone (USA): 800-888-5858; Web: www.compaq.com/products/hand helds/

Aero 2100 (8MB RAM) – $449

Aero 2100 (16MB RAM) – $499

The Aero 2100 has one of the most-readable screens of any *Palm-size* PC, especially in bright sunlight. This color-screen Palm-size PC is powered *by a 70 MHz MIPS processor and 8 MB RAM (16* and 24 MB expansion modules will be available). Aero will ship with Audible Content Player, Compaq Asset *Management, dictionary tools, an expense tracker and* scientific/financial calculator. A Japanese-language version of the Aero will be available.

Everex

Contact: Everex Systems; Phone (USA): 888-PALM-PC-4; Web: http://freestyle.everex.com/

Everex color-screen Freestyle — $500

Color-screen Palm-size PCs with a large, front-lit 240 x 320 color display and enhanced rocker-arm navigation button to make one-handed use easier.

Freestyle Associate 4MB RAM - $269

Freestyle Manager 8MB - $329; 16MB - $399

Freestyle Executive 8MB - $449; 16MB - $499

This is the smallest and thinnest of the Palm-size PCs. The Manager and Executive come with a light-weight mobile data cradle that carries extra batteries to extend the Freestyle's battery life. The Executive's data cradle has a built-in fax/modem. Another nice feature in all models is the silent vibrating alarm that lets you know when an appointment comes due without disturbing others. The power and navigation buttons are recessed. You won't accidentally press them, *but finding them without looking takes a little* practice. The display is a little hard to see in poor lighting conditions. All versions of the Freestyle ship with *rechargeable batteries and AC adapter.*

Hewlett-Packard

Contact: your local HP dealer or Hewlett-Packard Company; Phone (USA): 800-443-1254; Web: www.hp.com/handheld

HP Jornada 420 – $519

The Jornada 420 is a color-screen Palm-size PC powered by a 100 MHz *SH7709a CPU. It will use the Windows* CE 2.11 operating system and have the standard Palm-size PC built-in applications. It will also support FLEX CompactFlash paging and modem cards (optional) allowing the users to send and download short message service (SMS) messages with integrated infrared and Trio Phone-Manager software. The 420 is available to end-users, but HP will target corporate users and vertical niches.

Philips

Contact: Philips Mobile Computing Group; Phone *(USA): 888-367-8356 or 408- 558-2200; Fax: 408-* 558-2222; Web: www.mobile.philips.com

Philips Nino 500 – $499

A nicely-styled color-screen Palm-size PC with 16 MB of internal RAM and a great collection of additional software. The Nino 500 accepts the 19.2 kbps clip-on modem used with the earlier Nino 300 Palm-size PCs.

Philips Nino 301 - $399.99

Philips Nino 302 - $499.99

One of the nicer-looking Palm-size PCs. The Nino comes with a built-in modem, making it larger than most, but still pocketable. The Nino 302 comes with a NiMH rechargeable battery pack, an option for the 301. Either Nino can use standard AA batteries in a pinch.

Trogon

Contact: Trogon Computer Corporation; Phone: 562-802-8702; Fax: 562-802-2879; Web: palmpower.trogoncomputer.com/

Paume C4000 – $na

A 256 color screen Palm-size PC powered by a Lithium-*ion rechargeable battery. The Paume comes with a* CompactFlash backup and restore utility and ART handwriting recognition software.

Palm Power C2000 (*4MB RAM*) - $215

Palm Power C2001 (8MB) - $315

Palm Power C2002 (8MB) - $415

We haven't tested this unit yet, but the *hardware appears to be identical to the Everex* Freestyle series. See Freestyle summary comments.

Uniden

Contact: Uniden; Phone (USA): 888-6-UNIDEN; Web: www.uniden.com

UniPRO PC10 - $379

We have not tested the UniPRO yet and have no feedback.

Auto PC

Clarion

Contact: your Clarion dealer or Clarion Sales Corporation; Phone: 310-327-1999; Fax: 310-327-1999; Web: www.autopc.com or www.clarionmultimedia.com

Clarion Auto PC - $1,299 (not yet shipping)

Voice command capability *allows hands-free use for* driver. Fits into the standard slot used for auto-stereos and tape players. Comes with AM/FM stereo tuner and CD/CD-ROM player. IrDA port to transfer data between Auto PC and other PC Companions.

A Windows CE based news client, News Force suppors both online and offline news reading. Users can read and download news articles from their favorite USENET newsgroups. Users can download relevant articles from the Internet to their H/PC and read them offline, or reply or forward them.

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NEWS Force

Tom Gibson
Technical Editor

On the Road with Mobile Channels

This issue of *Handheld PC Magazine* is supposed to focus on "on the road" topics. But whether you are behind the wheel of a car, or walking behind someone in the hallway, the real issue is mobility – cutting the cable to your desktop PC and taking important stuff with you wherever you go.

I decided to take another look at a way to take the Web with you — Mobile Channels. This is the feature built into Palm-size PCs that lets you download Web content when you synchronize your PC Companion. (A free version of the Mobile Channels Viewer for H/PCs can be downloaded from Microsoft's Web site:

www.microsoft.com/windowsce/
Products/download/list.asp

What is a "Mobile Channel"

A mobile channel can be thought of as a small-scale Web site designed specifically for offline browsing, and with the unique form factor and capabilities of a Window CE-based device in mind. A user can subscribe to a mobile channel through Internet Explorer 4.0 on their desktop computer. Then, when they synchronize their PC Companion with their desktop PC, the mobile channel content gets downloaded to the Windows CE device. The content can be viewed on the PC Companion with an application called Mobile Channels Viewer. A user can also view a mobile channel directly on a desktop computer using the Internet Explorer 4.0 browser to download and view Mobile Channels content if he or she has Windows CE Services 2.10 or later installed. More of the basics about Mobile Channels is available on Microsoft's Web site, at:

msdn.microsoft.com/workshop/
delivery/mobile/actair_g.asp

Over 60 Mobile Channel sites

There are over 60 sites that offer Mobile Channels you can subscribe to. Some of the sites update their Mobile Channels regularly (daily, weekly), and some don't update them at all. Here are some that caught my attention:

City guides to:

Adelaide, Australia
www.fortunecity.com/skyscraper/integer/335/pguide/adelaide/pgad.cdf

Canterbury, England
thycotic.com/ppcguide/canterbury/pgct.cdf

Sports team schedules

San Diego Chargers
duke.net/channels/chargers/mobile.cdf

Syracuse University Football
members.aol.com/WbDv/ppcchannel/mobile.cdf

Also...

Windows CE news, reviews, etc. from PDA Dash
www.pdadash.com/channel/dash.cdf

Random insult quotes from Shakespeare plays
www.iinet.net.au/~brian/insult.cdf

MSNBC news, sports, etc.
www.msnbc.com/news/MobileChannel/msnbcmc.cdf

Dilbert's list of the day
umweb2.unitedmedia.com/comics/dilbert/lotd/html/lotd.cdf

Chris De Herrera's up-to-date listing of Mobile Channel sites

Chris keeps the most current list of Mobile Channels on his Web site: www.cewindows.net. Go there, click on the Mobile Channel Links link, and subscribe to these Mobile Channels right from Chris' site.

Turn your favorite Web site into a Mobile Channel

There are millions of Web sites out there, but only 60 of them are Mobile Channels. Fortunately, you can turn your favorite Web site into a Mobile Channel yourself, by using the Mobile Channels Wizard from Microsoft (same download link as Mobile Channels Viewer, above). Unlike standard mobile channels, a Mobile Channel you create is not a subscription and will not be updated automatically. You must run the Mobile Channel Wizard on those Web addresses each time you want to download content. Microsoft tells you how you can automate the updating using the scheduling tools in Windows 98, Windows 95 with Microsoft Plus!, and Windows NT.

Mobile Channels makes it possible to take the Web with you, without even being online. Read news, the funnies, stock reports, Shakespearean insults, and more, wherever you are. Go subscribe to one or more mobile channel, or create your own. Mobile Channels is an enjoyable alternative to Solitaire – and you never lose.

Until next issue, I'll see you OnLine! ■

Andrew M.
Seybold

Information Appliances

Just what is an "information appliance," anyway? The phrase is being used to describe a wide range of devices with varying capabilities. For the purpose of this discussion, I shall define an information appliance as any mobile device that is designed to provide a user with access to information stored on the device, or to information stored elsewhere when connected to data resources via a wired or wireless link.

Examples include the Windows CE PC Companions and other palmtop devices, and "smartphones," such as the Motorola StarTAC phone coupled with Starfish's clip-on Mobile Organizer. To some, these devices fall under the title of "Personal Digital Assistants" (PDAs). To others, this class of products will always be known as "Palm" computers (even though 3Com uses the name "Palm" to describe its product).

"Smartphones"

A smartphone is a combination mobile phone and personal information manager. Motorola redefined the smartphone category by providing a clip-on personal organizer for its existing StarTAC phones. IGS introduced its own version of a smartphone incorporating personal information management software (a PIM) developed by Unwired Planet. The IGS smartphone is not much larger than standard wireless phones. A number of other companies announced their own versions of a smartphone including the Nokia 7110, and Ericsson's R380 smartphone as well as its MC218 two-piece solution that is a handheld organizer based on the Psion EPOC operating system. Smartphones are a subset of Information Appliances.

Palmtops

The name "palmtop" was first used with wlett-Packard's 95/100/200LX series of all handheld computers. HP's LX almtop PCs developed a devoted, but relatively small user base. When you mention "palmtop" today, most people think of 3Com's Palm line of products, which rebirthed the PDA market. Newton's lack of success caused users to lose interest – until the PalmPilot came along. In just a few short years, Palm products have become the biggest thing to happen in the information appliance space, and Palm continues to improve on its products.

Palm Line of Products

Posted on the Palm Web site (www.Palm.com) you will find a comparison of the four available Palm products—the Palm V, Palm IIIx, Palm III, and PalmPilot Professional. (The Palm VII is not yet shipping and is not listed in the chart). List prices are $449 for the V, $369 for the IIIx, $299 for the III, and $199 for the Palm Pilot Professional. Storage (memory) for the four units is 2 MB for the V and III (expandable on the III only), 4 MB for the Palm IIIx, and 1 MB (expandable) for the PalmPilot.

Only the Palm V uses a rechargeable battery. All of the others use AAA alkaline batteries and provide two to three months of battery life. All of the units except for the PalmPilot have an infrared port, and all have upgradable operating systems. However, the Pilot requires a new ROM to upgrade it to Palm III capabilities. The Palm V's only hardware expansion capabilities are via the serial port while the Palm IIIx, III, and Pilot have an expansion slot for memory, paging cards, etc.

Given the fact that Palm owns the lion's share of the handheld or palmtop market, it will take a lot of effort on the part of the other players to be able to chip away at Palm's market share. The only chink in the armor that I see is the forthcoming Palm VII with built-in wireless modem — for all of the reasons stated in our review of that product and my comments in the *Outlook's* January Mobiltorial. Many of the shortcomings I cited are not problems with the hardware design, but rather problems with the points of wireless connections. These can be identified and fixed if Palm decides that it has misjudged the market. But there is one flaw that cannot be easily addressed. The Palm VII's wireless modem remains off until the anten-

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Andrew Seybold heads a computer and communications industry consulting and newsletter company, and publishes the well-respected Andrew Seybold's Outlook on Communications and Computing. He has an extensive radio communications and computer background, is recognized as one of the top analysts in these fields, and is a founder and President of the Portable Computing and Communications Association (PCCA). Andrew Seybold's Outlook can be reached at 408-338-7701, fax 408-338-7806, e-mail: lseybold@outlook.com na is raised. This means that the Palm VII is unsuitable for "push" messages (messages that are sent to wireless devices from a server or mail server).

The Windows CE OEMs do have a few tricks up their sleeves. However, when it comes to devices that are connected only with a cable and a cradle while in the office, Palm should retain its lead for a while yet.

Windows CE Palm-size PCs

This does not mean that Windows CE Palm-size PCs will not do well. Hewlett-Packard just announced and began shipping the world's first color Palm-size PC and I expect to see others in the market shortly. [Editor's note: "Palm-size PC" was the term Microsoft settled on to describe Windows CE palmtops since 3COM held the rights to "Palm."]

The HP Jornada 420

The Jornada 420 from Hewlett-Packard (www.hp.com/jornada/) is larger and heavier than a Palm IIIx, but it has an adjustable backlit screen sporting 256 colors. The Jornada 420 is powered by a rechargeable lithium-ion battery that provides up to eight hours of operation between charges. A little known fact is that the battery is a standard Sony camcorder battery, easily available at retail outlets around the world. The Jornada 420 is a nice machine. At $519 it is priced above the Palm V's $449, but not by much. While it is larger and heavier, it does sport a color screen that is easy to read in most light environments. The color screen adds a new dimension to Palm-size PC products, and HP has done a nice job with the Jornada 420.

The Nino 500 is Philips' (nino.philips.com) new color-screen Palm-size PC. The Nino 500 is a little smaller and lighter than the Jornada 420, but still larger than the Palm IIIx. The Philips folks put a lot of attention on add-on software. The Nino 500 includes some excellent titles for serious business users as well as for the game and audiophile crowd. Philips also appears to be placing a lot of emphasis on Internet access capabilities. Time will tell whether users really want and need all of this software. The voice command-and-control software might prove to be a handy addition if others do not perceive us as talking to ourselves as we speak our commands to navigate within this Palm-size PC. The Nino 500 will list at $499 with a 19.2-Kbps optional modem available for around $90.

The Aero 2100 is Compaq's (www.compaq.com/products/handhelds/2100/) first Palm-size PC. Its 256-color TFT display does not require backlighting and is extremely readable in bright sunlight. While it is the largest and heaviest of the three color-screen Palm-size PCs, its controls are well laid out and convenient, customizable application buttons across the front of the unit add to its ease of use. If you intend to use your Palm-size PC outdoors a lot, the display is a plus. The Compaq Aero 2100 lists for $449 for the 8 MB version and $549 for the 16 MB version. And Compaq is offering a number of accessories.

Everex (freestyle.everex.com) and Casio (www.casio-usa.com) will release color-screen Palm-size PCs, but I have not seen them yet.

Other Information Appliances

My definition of "information appliance" includes wireless communications capability. So far, I've mentioned smartphones and various palm-sized devices. The PalmPilot has external wired modems and the Palm VII will come with a built-in wireless two-way modem. The Windows CE Palm-size PCs have external wired modems and two (Compaq and HP) come with radio-shielded CompactFlash expansion slots, which will allow the use of wireless two-way modems in the Compact card form. There are many other information appliances available, including the Research In Motion Inter@ctive two-way pager, Motorola PageWriter 2000 two-way pager, and a variety of handheld PC products based on Windows CE, EPOC, and scores of other operating systems. And the number will continue to grow.

Information appliances are the next big deal in the technology world. They will come in all shapes and sizes — palmtop-size, handheld-size, phone-size, smaller sizes, bigger sizes, and probably even wearable sizes. The "winners" will have one thing in common. They will provide the consumer with an easy-to-use tool that solves a problem for them. ■

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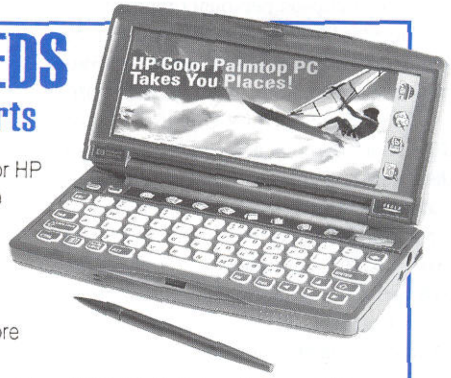

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Hal
Goldstein

Is Windows CE Ready Yet?

I write this on a plane using an HP Jornada 680. The necessarily small keyboard is the most touch-typeable that I have seen in this form factor. The slightly heavy and bulky unit still fits in my pants pocket. I wish I could use AA batteries in a pinch, but the rechargeables do give an international flight's worth of battery life. Compromise was inevitable and HP made reasonable choices in this, my favorite H/PC form factor.

Microsoft still must address critical issues

Hardware improves, but what about Windows CE? According to many users on Windows CE newsgroups and forums, Microsoft still hasn't gotten Windows CE Services right. Microsoft bases its "PC Companion" philosophy for Windows CE on seamless connectivity with the desktop. With the latest Windows CE services 2.2 (available at www.microsoft.com/windowsce), Microsoft has improved things. Still, desktop users with a phone dial-up modem connection, users not possessing a serial port that they can dedicate only to Windows CE connectivity, and many users of Windows NT have experienced serious and time consuming problems with Microsoft's handheld to desktop software. It may not be easy to get it right, but that is what Microsoft gets paid for. At this stage in the product cycle, I don't understand how the device manufacturers, who assume most of the tech support burden, and who must receive customer complaints, tolerate these kind of problems from Microsoft. These aren't obscure bugs. Users with common configurations have trouble.

Alternatives to serial port connectivity

I find serial connections cumbersome at the best of times and frustrating otherwise. Without a second serial cable, in order to use Windows CE services on my home and work computers, I must crawl and squeeze to get to the serial port and screw and unscrew the cable. Furthermore, I must dedicate a serial port on both these desktops for use with my H/PC in order not to disturb the rest of each system.

Why does Microsoft limit file transfer, software installation, and synchronization to serial and IR? Instead, we could use storage space for backup and as a buffer for desktop to H/PC file transfer activities. In other words, let us use a PC card, the Web, or a PC hard disk. Let me swap my PC card between my H/PC, laptop, and desktop to synchronize and transfer files or install software. Alternatively, let me perform those transfer functions accessing storage space on the Web or on my desktop's hard disk using my H/PC modem.

Thankfully, the latest version of Pocket Office applications on the H/PC Pro lets me import and export desktop Word and Excel documents directly into and out of Pocket Word and Pocket Excel. Now, for example, if I'm on the road and a colleague sends me an e-mail with a Word or Excel document as an attachment, I can easily open it in the corresponding Pocket applications. It also means I can copy desktop Office files directly to a PC card, insert the PC card into my H/PC, and open them without any hassle. I'm no longer dependent on Windows CE Services or my desktop PC to translate the files.

Standard operating system may need a standard CPU

Standardization took place in the PC world thanks to Microsoft DOS and Windows operating system software, and because of the x86 Intel processor series. Windows CE offers handhelds an industry standard operating system, but unfortunately for software developers and users, Windows CE can currently run on five different microprocessors, and Microsoft plans to expand this list further. This means that a developer must compile his application for each existing processor, and again for each new processor when introduced. To make matters twice as bad, the developer may need to produce a version for both Windows CE 1.x and 2.x. Microsoft provides tools to Windows CE developers to eliminate a lot of this complexity. However, the myriad of possibilities still result in difficulties for both developers, OEMs, and users.

For example, late in 1998, HP introduced its Jornada 820 H/PC using the new 190 MHz Intel Strong Arm CPU. That meant all software already written and released had to be recompiled for it to work on the Jornada. It is expensive for companies to update software that they distribute using commercial packaging, plus it takes many months for updated versions to reach the consumer through the retail channel. While the 820 was an excellent machine, very little third-party software worked with it when it was first released.

Meanwhile, hobbyists and tinkerers produce excellent freeware and shareware, often in their spare time. These programmers may not have the time or interest to recompile their software every time a new processor appears or a new Windows CE version gets released. Further, it probably is not even possible to update the many existing versions scattered throughout the Internet.

Perhaps, over time, one or two processors will emerge as the defacto standard. However, in the foreseeable future, as competition heats up, we can expect just the opposite. More companies are introducing new processors for Windows CE, each with its own set of advantages and trade-offs.

As always feel free to e-mail Rich or me with your suggestions or comments at rich@thaddeus.com and hal@thaddeus.com. ■

Hal Goldstein is Publisher and Executive Ed of *Handheld PC Magazine* and presiden Thaddeus Computing. He has published, edite and written for five magazines on portable computing since founding Thaddeus Computing in 1985. You can e-mail Hal at hal@thaddeus.com.

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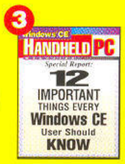

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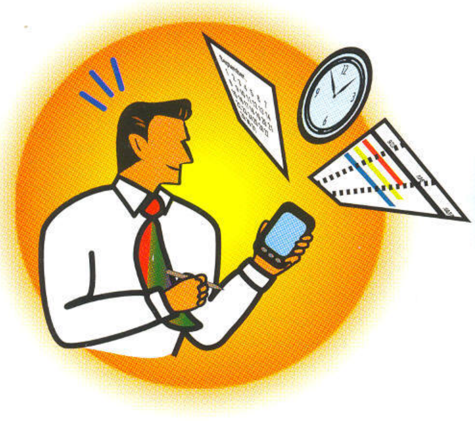

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